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Inferiority Complex

SIR MACPHERSON ROBERTSON, in a letter to *The Times*, has lodged a protest against the notorious British tendency to belittle native achievements in comparison with those of foreigners. Naturally, he is thinking of the aftermath of the air race to Melbourne. "On all hands here," he writes, "I hear little but praise for America and invidious comparisons between British and United States civil enterprise. The fact that in the latter country the service there has cost, and is costing, taxpayers millions of pounds is not taken into account. Modesty has always been a not unpleasant national idiosyncrasy of ours. When invested with the dignity of such authority it assumes the proportions of a grave defect."

Probably, since writing the above letter, Sir Macpherson has read the article in last week's *Flight* on "Some Pan-American Figures," and in that case he will have been pleased to see that some papers do not refuse to face the facts. When set a definite task our designers rarely fail to produce the required type of machine. Up to last year they had not been asked to design a machine with the precise qualities of the Douglas, but they did produce the winning "Comet."

For the future development of our Empire air lines it seems that a type with better economic qualities than the Douglas will be required. Undoubtedly the Air Ministry hoped to help on the production of such a type when the prize of £25,000 was offered. The competition for that prize will not now take place, and it seems fairly certain that the reason is that foreshadowed in *Flight* at the time: The prize offered was too small. Competitions are always a doubtful way of obtaining a good working result, and they are more useful during the infancy of an industry than when development is fairly well advanced. The air line operators now know what they want, and we feel sure that before long the class

of machine needed for the immediate future on our Empire lines will become an accomplished fact.

Dual Control

ALTHOUGH only one Territorial searchlight battalion was in camp at the time of the Air Exercises, and so was able to take part in them, the War Office has lately had a number of these battalions in camp round Portsmouth, and last week a series of night attacks was made on the great docks by the "Heyfords" of No. 10 (Bomber) Squadron. The result was most disappointing. Though fifty searchlights were at work, very few of the raiders were caught in the beams. It has been suggested that the Territorials have been accustomed to working with "Virginias," and the men on the sound-locators calculated the time which that machine would travel while the sound was reaching their ears; accordingly they were thrown out of their calculations when the "Heyfords" moved faster.

That explanation may or may not be correct, but it is far more likely that the old patterns of sound-locator and light, with which most of the Territorials are still equipped, were not equal to the special circumstances which prevailed. There has lately been so much talk and energy expended on the subject of air defence that the War Office will probably soon provide the latest equipment for the air defence units. People may well ask why this re-equipment had to wait until the Government was driven to such a drastic step as trebling the home defence force. Surely the small number of ground units ought to have been brought up to the last point of efficiency, just because they were so few in number.

Constant training is just as important as good equipment if our aid defence is to take sufficiently heavy toll of raiders in war, and at present combined training of ground units and aircraft is only possible when the pro-

grammes of the Air Ministry and the War Office coincide. When the War Office does not arrange for the ground units to be in camp they cannot work with the fighters. It is impossible to expect that *n*th degree of efficiency which is so necessary when training depends on two separate Government departments making their arrangements fit in with each other. There are some descriptions of warfare in which it is possible to tolerate a moderate degree of efficiency. Warfare itself will provide plenty of training, and things will right themselves before long. There may be quite a number of avoidable casualties, and a battle or two may be lost, but the British Empire will come out all right in the end.

That sort of preparation will not do when London has to be defended against air attacks. Shooting down the raiders in numbers is, we are told, the way to stop the attacks, and night raiders cannot be shot down unless the sound-locators and searchlights can get on to the bombers with the greatest speed. It is a matter of saving split seconds. These cannot be saved unless the whole defence machine is working with the greatest precision, and that does not seem possible with the present organisation. Failure was to be expected, and now a failure has occurred in these Portsmouth exercises. If this failure convinces the Government that the whole air defence organisation must be placed under one control, namely the Air Ministry, then the failure will have been a very good thing.

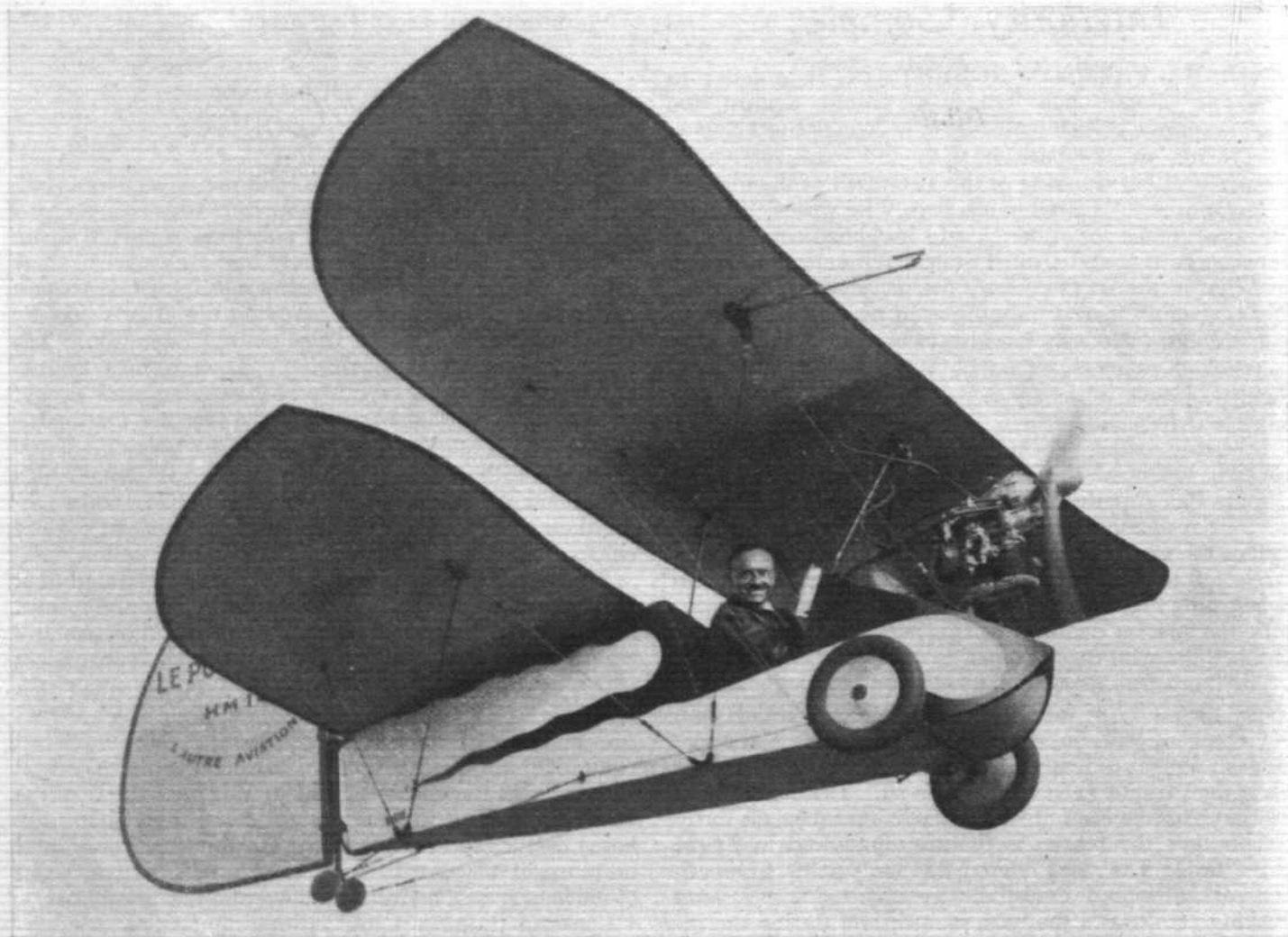
Research Wanted

THE arrival in this country of Monsieur Henri Mignet and his "Flying Flea" (or Sky-louse, as the French call it) has drawn attention to the fact that, in spite of some 60 of these machines already built and flown in France, and quite a few being constructed in this country, little or nothing is known of the aerodynamics of the "Pou-du-Ciel."

One knows, of course, that in the orthodox aeroplane span is important in keeping down induced drag, and one knows that M. Mignet does obtain a slot effect from the peculiar arrangement of the wings of his little machine. But actual figures of lift, drag and L/D are not available.

Then there is the question of controllability. As is well known to *Flight* readers by now, M. Mignet uses but two controls: rudder and elevator. There has been a tendency to assume that the slot effect of the Mignet wing arrangement effectively prevents spinning. It is by no means certain that this is the case.

A number of characteristics associated with the "Pou-du-Ciel" need investigation, and the machine is sufficient of a novelty to warrant serious tests. We would suggest that the new full-size tunnel at Farnborough might be used for testing an actual machine, complete with running engine. There would then be no need for scale corrections and similar allowances.



PORTRAIT OF A PIONEER: A remarkable photograph of M. Henri Mignet flying his "Pou-du-Ciel." Details of this interesting aeroplane are published on pp. 205-206 of this issue.

The Outlook

A Running Commentary on Air Topics

R.A.F. Expansion Hurry

SOME measure of the feeling of the Air Ministry as to the urgency of their expansion programme may be gauged from the fact that temporary wooden buildings are being erected at some of the new aerodromes so that units may be housed almost immediately and work started. This overcomes the necessity for delay while permanent brick buildings are being built.

Limited Licence

AS previously recorded in *Flight*, the Air Ministry is following the recommendations of the Gorrel Committee in granting permits for flying correctly constructed "Pous." Each machine has to be registered in the normal manner, and is then granted registration letters, for which a fee of one guinea is charged. The permit to fly states that the machine need not be certified as air-worthy and that it need not, therefore, carry a certificate of airworthiness. Certain restrictions are imposed; for example, flight over populous areas or concourses of people is forbidden; the machine must not be used for aerobatic flying; it must at all times be maintained in sound working order, and there must be in force, when it flies, a third-party insurance policy.

Regarding a Pilot's Licence

EXCEPT for the purpose of becoming eligible for the issue of a pilot's licence, the "Pou" may not be flown unless the pilot is in possession of a current licence. The rules and regulations as laid down, Air Navigation Directions, 1932 (A.N.D.II), Section XII, Sub-Section D, and paragraph 112 in particular, concerning pilots' licences, apply to the "Pou" as to any other machine. The tests for the "A" licence are also the same, namely, five figure-of-eight turns around marks 500 yards apart, a glide from 2,000ft., a landing without engine to within 150 yards of a pre-determined mark, and a normal landing to within 50 yards of a mark. The normal knowledge of lights, signals, and rules of the air will also be required.

Air-conditioned Air Liners

THROUGHOUT America the term "air conditioned" is used almost to excess, not only for houses, cinemas and theatres, but also for railway trains and other means of transport. The people in the States rapidly seem to be coming to the time when natural fresh air will be anathema to them. They prefer an even temperature artificially supplied, which has been cleaned, scrubbed and humidified to a certain degree. Apparently the latest application of air conditioning is to aircraft, and we learn that there is every probability of the pan-American Douglasses, which carry the bulk of the air traffic through central America, being fitted with a plant which will maintain the cabin temperature at a comfortable degree, both while the machine is on the ground and when it is flying. This will be a great boon, as sometimes on the ground in that part of the world the temperature in a large metal machine reaches a very high level indeed, and then cools off rapidly after taking off as the machine attains its cruising altitude. This rapid change can quite conceivably put a serious strain on some passengers.

Italy in the Mediterranean

MALTA may well become a point of the greatest importance if Italy does eventually wage war on Abyssinia. For many years past—almost from time immemorial—Italian propaganda has been active in that island, and it is probable that much of the internal trouble has been caused by pro-Italian factions. Developments there will bear watching during the next few weeks. At the present time Malta is the headquarters of the R.A.F. Mediterranean Command. Based on the island are only No. 202 Flying Boat Squadron, which is temporarily equipped with Fairey IIIFs, and the station flight at Hal Far. The following Fleet Air Arm units are, however, administered by the Command: Squadrons No. 812 (Baffins) and No. 825 (IIIFs); and Flights Nos. 445 and 447 (Ospreys).

Efficiency

FACTS which have come to light recently show that Campbell Black's flight from London to Cairo and back some time ago proved in every way successful from a technical point of view. But for a "dip stick" of wrong length used in the oil tank, there is no reason to suppose that the London-Cape Town flight and return would not have been made in record time. The story of how it all came about is told in this issue.

The amazing efficiency of the "Comet" was illustrated by the fuel consumptions on both outward and homeward flights. On the former the machine used 18.8 gallons of fuel per hour. As the speed was approximately 200 m.p.h., this corresponds to nearly 11 miles per gallon. The return flight was made on a consumption of about 17½ gallons per hour, or nearly 11½ miles per gallon. Considering that speeds of 200 miles per hour or so are being made good, it would be difficult to find a vehicle to equal this efficiency.

A "Ferry" Type?

NOW that our internal air line system is settling down and operators are beginning to obtain an idea of the traffic potentialities of certain routes, the possibility of using bigger machines is being considered.

It is probable that for some time to come large capacity machines could only be filled either on popular holiday services or on short-haul services over estuaries and the like where the saving of time is proportionately great. Such ferry services are used not only by the time-savers but also by people who feel that the service provides a very economical joy-flight. Furthermore, for every person who can afford to pay £10 to travel quickly and comfortably there are ten persons who can afford to pay 10s.

As the passenger lists extend, one or two of these essentially "ferry" routes might economically be flown, during the rush season at least, with really large capacity machines. On such short routes a cruising speed above, say, eighty or ninety miles an hour could be sacrificed for a higher payload so long as the machine could always be well filled.

Already one or two operators have found that large machines can be made to pay when intelligently used and sheer size has a distinctly favourable psychological effect on the prospective passenger.

BUILT BY



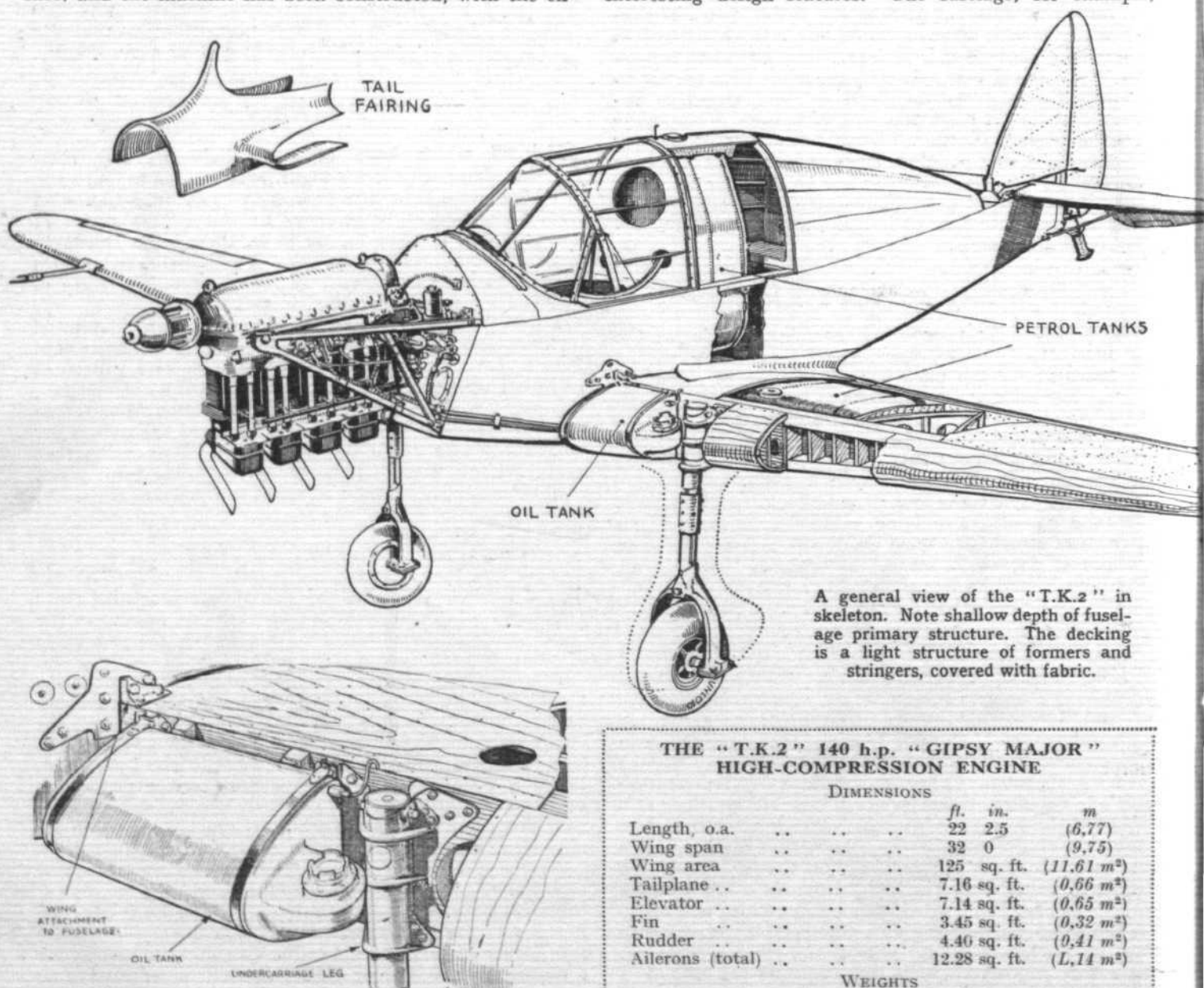
BEGINNERS

The "T.K.2," Entered by Lord Wakefield for the King's Cup Race and to be Piloted by Capt. Hubert Broad, Was Built by Students of the De Havilland Technical School

It would be difficult to imagine a better way of encouraging students than to let them build an actual aeroplane. This policy, it may be remembered, has been followed at the De Havilland Technical School for some years, the students there first building "Moths," and afterwards a machine actually designed at and for the school. The "T.K.1" was flown in last year's King's Cup Race by Geoffrey de Havilland, jun., and put up a very good show. This year the instructors at the school have designed a low-wing cantilever monoplane for the race, and the machine has been constructed, with the ex-

ception of a few bits of panel beating and such things, rather outside the limits of the beginner, entirely by students of the De Havilland Technical School. Let it be said at once that they have acquitted themselves very creditably of the task. The workmanship is good, and there is nothing "amateurish" in either the design or the construction.

The "T.K.2," as this year's D.H.T.S. King's Cup machine is called, is a low-wing monoplane, almost entirely of wood construction, but incorporating quite a number of interesting design features. The fuselage, for example,



A general view of the "T.K.2" in skeleton. Note shallow depth of fuselage primary structure. The decking is a light structure of formers and stringers, covered with fabric.

THE "T.K.2" 140 h.p. "GIPSY MAJOR" HIGH-COMPRESSION ENGINE

DIMENSIONS

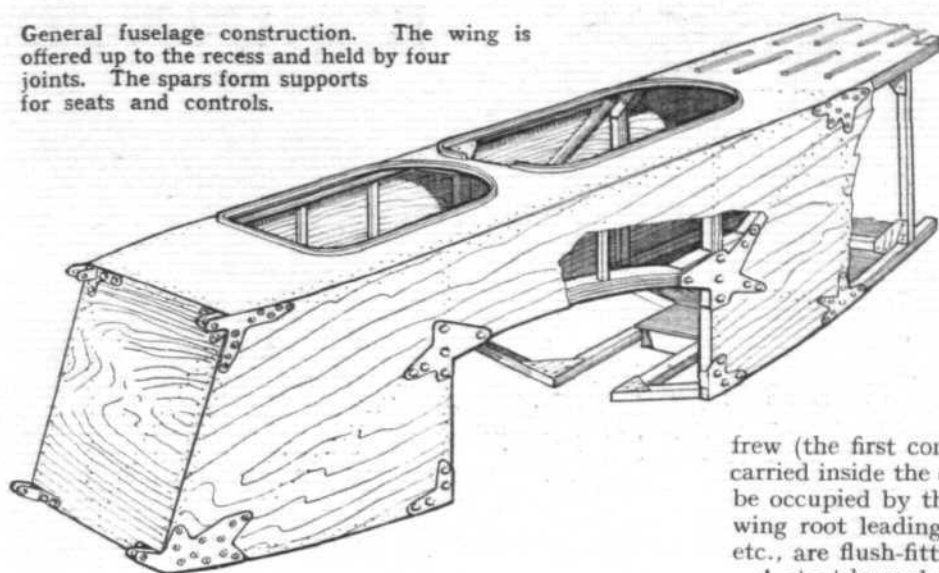
| | | ft. | in. | m |
|------------------|-------|-------|---------|-------------------------|
| Length, o.a. | .. .. | 22 | 2.5 | (6.77) |
| Wing span | .. .. | 32 | 0 | (9.75) |
| Wing area | .. .. | 125 | sq. ft. | (11.61 m ²) |
| Tailplane | .. .. | 7.16 | sq. ft. | (0.66 m ²) |
| Elevator | .. .. | 7.14 | sq. ft. | (0.65 m ²) |
| Fin | .. .. | 3.45 | sq. ft. | (0.32 m ²) |
| Rudder | .. .. | 4.40 | sq. ft. | (0.41 m ²) |
| Ailerons (total) | .. .. | 12.28 | sq. ft. | (1.14 m ²) |

WEIGHTS

| | | lb. | kg |
|-----------------|-------|---------------|-------------|
| Tare weight | .. .. | approx. 1,000 | approx. 454 |
| Disposable load | .. .. | approx. 500 | approx. 227 |
| Gross weight | .. .. | 1,500 | (680.39) |

The oil tank is built into the leading edge of the port wing root. One of the four bolted joints which secure wing to fuselage is also shown, as well as the attachment of the undercarriage leg to the front spar.

General fuselage construction. The wing is offered up to the recess and held by four joints. The spars form supports for seats and controls.



although of the three-ply box type, shows that some thought has been given to the problem. The primary structure which forms the "box" is of quite shallow depth, and the curved deck fairing is a very light skeleton of formers and stringers supporting a fabric covering. Owing to the fact that the machine has an enclosed cabin, the fuselage depth is considerable, and a light structure has resulted from keeping the primary structure shallow.

Perhaps it is in the design of the cantilever wing that the greatest ingenuity has been displayed. This is a one-piece affair, the central portion of the wing spars being offered up inside a cut-out in the bottom of the fuselage and forming the support for the two seats, the controls, etc. Four bolted clips secure the wing spars to the fuselage structure.

A "box" formed by two main spars, diagonal drag bracing members and top and bottom coverings of three-ply is the primary structure. To this are attached the leading and trailing edge portions, as shown in our sketches. The front spar is left open on its front side and the rear spar on its rear side, and the distance pieces between spar flanges are used for the attachment of nose and trailing edge ribs, as shown. Ailerons with mass balances and differentially-operated ailerons are used, but at present no trailing edge flaps are fitted, although it is intended to experiment later with various forms.

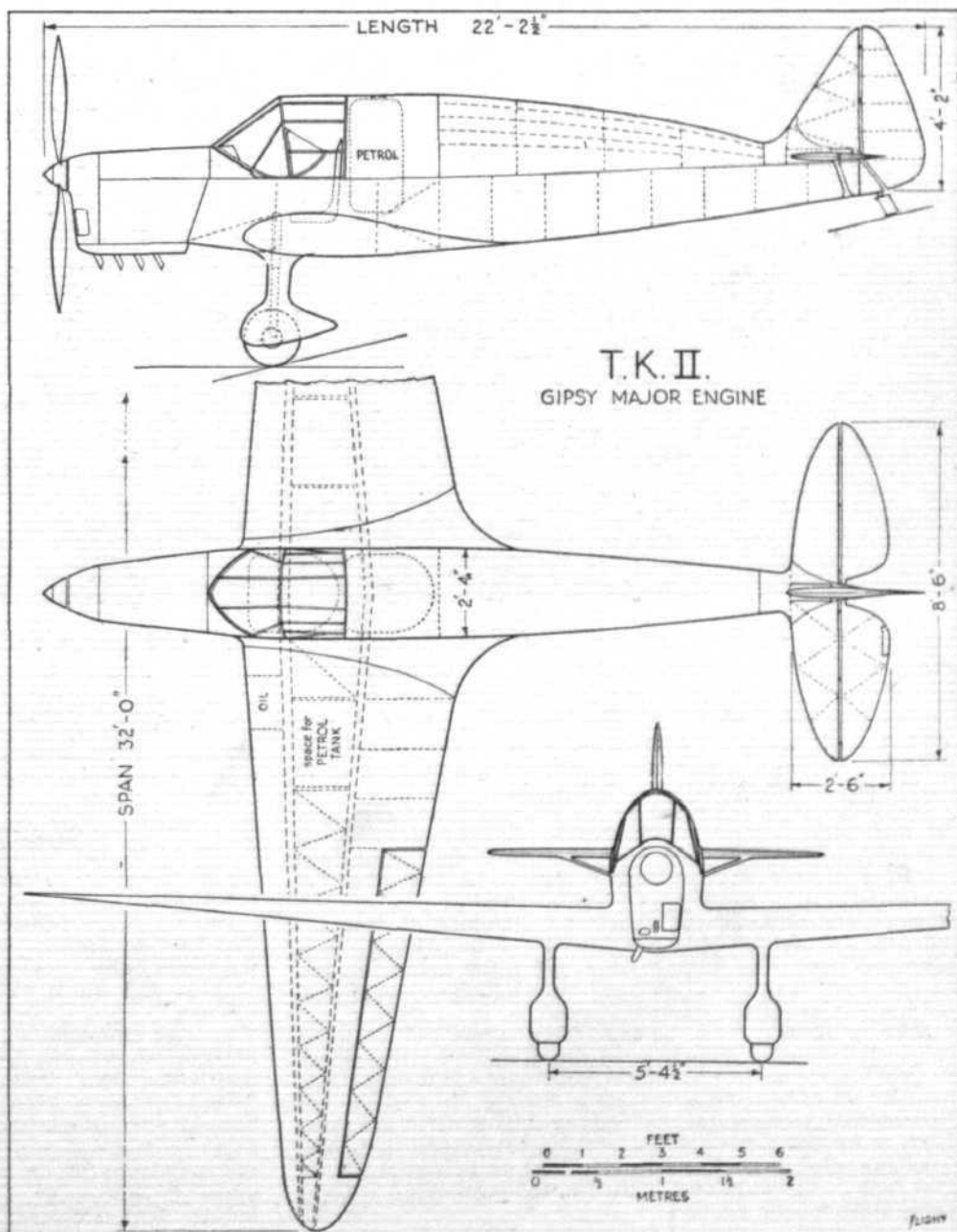
A very simple type of undercarriage has been evolved. Each half consists essentially of a single telescopic tube bolted to the forward face of the front spar, the lower and smaller member carrying the wheel in a symmetrical fork. The inner tube is prevented from turning in the outer by a long key on each side. As there is little tendency for the wheel to turn, it was not thought necessary to use splines around the entire member. The undercarriage

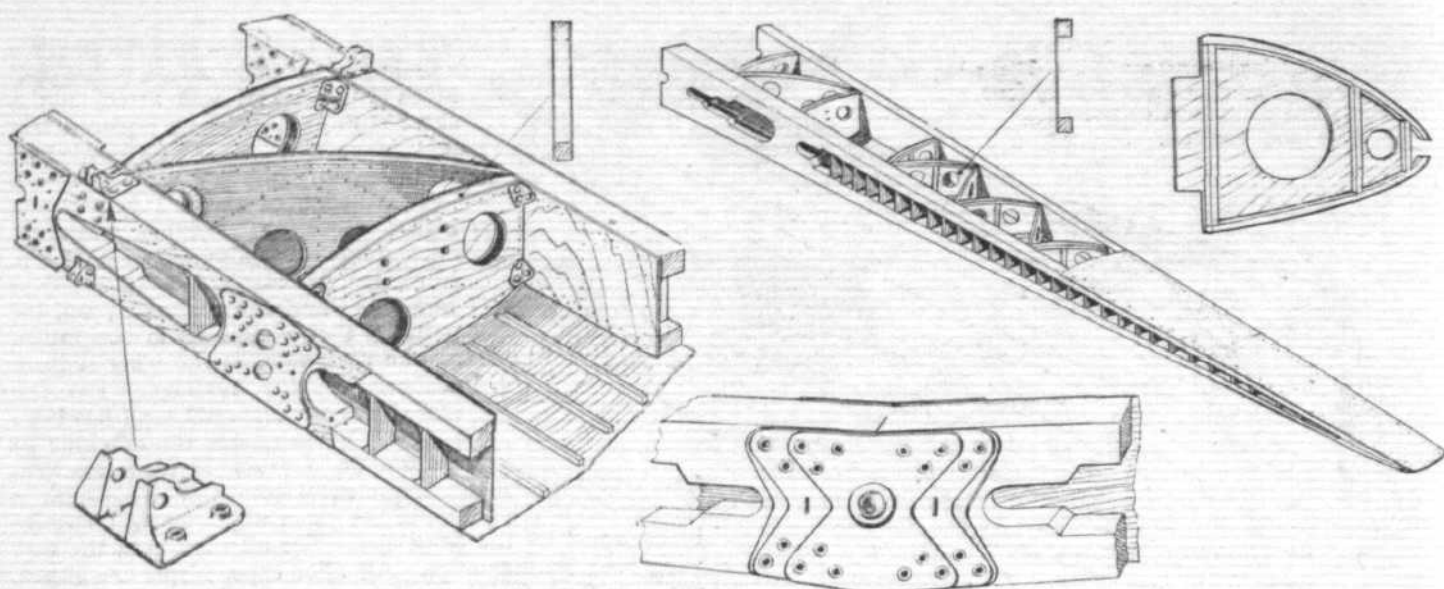
wheels and struts are covered in spats and fairings. Originally a "Leopard Moth" tail wheel was fitted, but a short stub skid has now replaced this and is carried on the original tail-wheel mounting.

The engine of the "T.K.2" is a high-compression "Gipsy Major" developing approximately 140 b.h.p. Normally the machine is intended to carry pilot and one passenger, and the petrol is then contained in two tanks, one on each side, in the wing slightly outboard of the fuselage. For the race, however, a special tank has been made so as to enable the machine to do the flight from Hatfield to Ren-

frew (the first control in the race) non-stop. This tank is carried inside the cabin, in the place which would normally be occupied by the passenger. The oil tank is in the port wing root leading edge. All filler caps, inspection doors, etc., are flush-fitting.

A strut-braced tailplane of wooden construction is fitted. Its angle of incidence can be altered while the machine is on the ground, but for trimming during flight "tabs" are used on the elevators. These are similar to the "tabs" on the "Hornet Moth," and are operated by Bowden cables from a lever on the starboard side of the cabin. The flying





Details of the wing construction. The primary structure is in the form of a box, comprising the two main spars and the plywood covering. Leading and trailing edge ribs are then attached to this box. Details of spar joints, etc., are also shown.

controls themselves are of the well-known Desoutter type.

Owing to the fairly high position of the pilot's seat and the low height of the fuselage walls, the view is particularly good, it being possible to look forward and downward without having to crane one's neck. The "T.K.2" was flown for the first time last Friday by Capt. Broad, who expressed himself generally satisfied with the machine. Per-

formance figures are not available, but from the fact that the power is 140 b.h.p., the wing area 125 sq. ft., and the gross weight 1,500 lb., readers may, perhaps, make reasonably close "guesses."

After the race the large petrol tank will be removed from the cabin, a second seat installed, and the machine may then possibly be used for research purposes.



The "T.K.2" before it received its final coat of paint. It is also minus its spats. (Flight photograph.)

The Alaskan Accident

LAST week America and the world lost two men who could be ill-afforded when the Lockheed special crashed in Alaska on its way to Siberia and Moscow.

Mr. Wiley Post, renowned for his long-distance flights, was far more than a mere record-breaker, and his stratospheric attempts, for instance, had they been successful, might have settled a number of interesting problems. A fine pilot and navigator, and a man of exceptional physical courage and stamina, Mr. Post was, in addition, a pilot who did not disdain to use any possible mechanical aid to pilotage. His famous *Winnie Mae* was always a flying test-bench for new navigational equipment, and his record flights always had definite lessons for the research worker.

Born in Texas in 1900, he had been a farmer and oil driller before he interested himself in air racing and record-breaking. In July of 1931 he became internationally famous for his flight, with Mr. Harold Gatty as navigator, around the world in less than nine days—a record which he beat, flying alone two years later, in the same machine but with an automatic pilot. The I.A.F. awarded its gold medal to Mr. Post for this flight. Since that time he had interested himself in the possibilities of high-speed stratospheric flights

There is little need to dwell on the work of Mr. Will Rogers, who was probably the most popular of American citizens, and famous as a philosopher, humorist, and actor. To us little more than a well-known name, to Americans he was a national hero.

Some New Registrations

AMONG the new registrations of interest are to be found G-ADMH and G-ADME. These represent the first two "Pou's" to be registered in this country. The former is that built by Mr. S. V. Appleby at Heston, and the latter is the one built by members of the Air Line League of the British Empire, and which will be flown by Air Commodore J. A. Chamier.

Another ultra-light machine which comes under the category of those permitted to fly without a full certificate of airworthiness is the B.A.C. "Drone," G-ADMU, which has been purchased by Mr. A. E. Coltman, of Leicester. The "Drone" has, since Mr. Robert Kronfeld took over the factory at Hanworth, been tested out very thoroughly by his flights to Paris, and is undoubtedly likely to create considerable interest among those who wish to fly, but who cannot afford the normal type full-size light aeroplane.



The FLIGHTS of the "BOOMERANG"

Details of Campbell Black's London-Cairo-London Flights: "Flying by the Book"

WHEN, just before the start of Mr. Campbell Black and Mr. McArthur on their London-Cape record attempt, the de Havilland "Comet" was christened *Boomerang* by Lady Fielding, there were those who shook their heads and aired the view that this was a very risky name to give an aeroplane intended for such flights. When news came through that the flight had been abandoned at Cairo they naturally felt vindicated. Wasn't a boomerang a missile which was apt to come back and hit those who threw it? But they had reckoned without Tom Campbell Black, who calmly set to work and proved that the real meaning of a boomerang, a weapon which, if it misses its target, returns to the hand of the thrower, also applied in this case. For did he not fly the "Comet" back from Cairo in very little more time than that taken for the outward journey? And did he not thereby prove definitely that, whatever had been the engine trouble reported to have forced him to abandon the flight, it could not be very serious if he was able to return in such excellent time?

In *Flight* last week it was briefly recorded that it was thought that the trouble was shortage of oil. It was, and the facts can now be told. The oil tanks of the "Comet" hold $8\frac{1}{2}$ gallons each. By a series of events which could probably never happen again, the dip-sticks were made to wrong dimensions, so that when the oil reached the "full" mark on the stick there was actually only $5\frac{1}{2}$ gallons in the tank. About $1\frac{1}{2}$ hours before he reached Cairo Campbell Black saw the oil pressure of one engine go down to zero. He throttled down the engine until it was just "windmilling," opened the throttle of the other engine a little, and continued the flight. For the actual landing at Cairo he used both engines for a short while.

No Damage Done

When the engine was examined at Cairo it did not appear to have suffered any damage, but it was decided to return to England. On filling up with oil again it was discovered that the mark on the dip-stick indicated a full tank before the level reached the top, and the tanks were filled completely. Not being absolutely certain that no serious harm had been done to any part of the engine, Mr. Campbell Black took a longer route for the homeward journey to avoid the larger sea crossings and to have within reach aerodromes at which intermediate landings could, if necessary, be effected. However, the return flight

was made non-stop, and in very little more time than that taken for the outward.

On the flight from Hatfield to Cairo the route lay over Dijon and Crete, and the time for the flight was 11 hours 18 minutes. It is interesting to record that the total fuel consumption on this flight was 214 gallons. This corresponds to about 18.8 gallons per hour, a mileage which, in view of the fact that the average speed was in the neighbourhood of 200 m.p.h., must be regarded as very good indeed.

Eleven Miles per Gallon

The homeward flight, via Sollum, Crete, Corfu, Brindisi, Naples, Rome, Pisa, Genoa, Lyons, Dijon and Paris, was made in 13 hours 6 minutes, and the petrol consumption worked out at just over $17\frac{1}{2}$ gallons per hour. With full oil tanks the supply proved ample, and the average consumption of the two engines was between 3 and 4.2 pints per hour.

When the *Boomerang* reached Hatfield the two "Gipsy Six" engines were taken out of the machine and sent to Stag Lane for stripping and inspection. They were found to be in perfect order, and were installed in the machine again, ready for another attempt. This may start any day, and there is every reason to expect success this time.

It will be appreciated that on a flight of this nature the crew has plenty to do. It is also obvious that the success or otherwise depends largely upon getting the best possible combination of speed and range. In order to relieve the pilots of as much work as possible, the de Havilland technicians worked out for Mr. Campbell Black a system of "flying by the book," whereby the pilot had merely to fly by air-speed indicator and altimeter (as far as best range-speed combination was concerned, of course).

Mr. R. M. Clarkson, of the de Havilland technical staff, read a paper before the Bristol Branch of the Royal Aeronautical Society on December 11, 1934. This paper is published in the March, 1935, issue of the Royal Aeronautical Society's *Journal*, to which those who wish to study the theoretical aspects are referred. Here it can only be mentioned briefly that to get the range required for some of the stages it is necessary to fly with the engines throttled. This, of course, reduces the speed, and as Mr. Campbell Black is attempting to lower the time for a flight from London to Cape Town and back, speed enters into the equation.

By flying at the reduced cruising power of the engines, but at a considerable height, the loss in speed is partly regained. For example, at an airspeed indicator reading of 185 m.p.h. and an ultimate range of 2,550 miles, the true speed is, of course, 185 m.p.h. at ground level. At 4,000ft. it is 196 m.p.h.; at 6,000ft. 203 m.p.h., and at 10,000ft. 216 m.p.h.

If a greater range than 2,550 miles is desired, the machine must be cruised at lower indicated airspeed. Thus, when the A.S.I. reading is 170 m.p.h., the range at ground level is 2,740 miles, but at 6,000 ft. it is 2,850 miles, and the true speed is 186 m.p.h. By flying at 10,000ft., still at 170 m.p.h. indicated airspeed, the range is increased to 2,920 miles, and the true speed is 198 m.p.h. These figures assume, of course, correct use of the mixture control, and all correspond to throttle openings within the permissible régime of weakening.

To guard against pilots running their engines at "weakest maintained" mixture at large power outputs a negative boost gauge is connected to the induction manifold. Weakening is only permitted when the boost is less than -3 lb./sq. in., which corresponds to full throttle at altitudes above 7,000ft.

It is to be remembered that running on too rich a mixture will reduce the range, but running on too weak a mixture will cause overheating and damage. Zero boost, in the case of the *Boomerang's* engines, represents atmospheric induction at sea level, and is, of course, the highest pressure obtainable, the engines not being supercharged. Above 7,000ft. the boost gauge shows depressions greater than -3 lb./sq. in. even at full throttle. At altitudes greater than about 7,000ft. full-throttle operation on weak mixture is therefore permissible without risk of damage to the engines.

On the assumption that most of the flight can be made at altitudes of 8,000-10,000ft., a simplification in the work of the pilot is possible. At such heights he can do no damage to his engine by flying on weak mixture, and provided he watches his altimeter to see that he is not dropping below the permissible level there is little need for him to watch his boost gauge. For an indicated airspeed of 185 m.p.h. (corresponding to a true speed of 216 m.p.h. at 10,000ft.) the full-throttle engine speed is approximately 2,250 r.p.m. If greater range is desired and the machine is cruising at 10,000ft. at an indicated airspeed of 170 m.p.h., the engines are throttled to 2,050 r.p.m.

CORRESPONDENCE

The Editor does not hold himself responsible for the opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for publication in these columns.

GROUND TRANSPORT

[3063] Further to your remarks on page 147 of *Flight* dated August 8, we realised the necessity for cheap ground transport, and ever since this aerodrome has been licensed there has always been transport available for private owners and other visitors arriving by air to enable them to get to Shanklin or Sandown.

A landing fee of 2s. 6d. includes free conveyance to the beach and has been much appreciated by visitors flying down with the intention of spending a day on the beach. We are able to include this service at a reasonable rate as we are close to the beach.

It is our experience in air taxi work that it is preferable, if necessary, to fly a little farther and land at an aerodrome where we know that transport is readily available, rather than to land passengers at what may be the nearest aerodrome to a town, but which proves the most difficult from which to reach that town.

E. H. B RNE, Managing Director,

Sandown and Shanklin Flying Services, Ltd.

Sandown, I.O.W.

WAR VETERANS

[3064] In a recent edition of *Flight* there appeared a photograph depicting the last resting place of the machine used by Sir Alan Cobham on his Australian flight some years ago. This has caused me to wonder whether Australia offers a better haven for such machines to find a resting place, as, when travelling there some three or four years ago, I came across a Sopwith "Pup" of war-time lineage and still in flying trim. This was at the aerodrome of the Pratt Brothers at Geelong, in Victoria, and the machine was complete with Le Rhone engine. Although it had not been actually flown for some while owing to high running costs, I imagine it must have created a record for longevity of aircraft, and forms a striking tribute to its construction by the makers.

It would be of great interest to hear of other cases with which your readers have come in contact.

I did see recently an advertisement for the sale of a Sop-

with "Camel" minus engine for £5, and the thought is prompted as to what sort of all-round performance some of these war-time-designed machines would put up now if fitted with a modern engine and improved methods of construction.

E. CLAYDON-EAST.

SERVICE AFTER SALES

[3065] I wonder if it would be possible to give some publicity to an urgent matter, lack of attention to which is affecting the well-being of civilian aircraft to no small extent? I refer to the absence of co-ordination existing between manufacturers of aircraft generally, and the repair and service depots, in the vital matter of efficient spares services. It is not in the best interests of either that the manufacturers should regard it as being of no importance.

It is common knowledge in the aircraft world that machines undergoing repairs and C. of A.'s are being held up for a totally unnecessary length of time, due to the apparent failure of the makers to maintain an efficient spares service. The withdrawal from use of club, school and air line machines for even a short period in the busy part of the year inflicts a loss of much-needed revenue and leads to additional strain being imposed on the remaining craft in the efforts to maintain an uninterrupted service or school, as the case may be. In addition, sooner than risk a machine being laid up for an indefinite period, there is a tendency to "carry on," with the inevitable result that sooner or later something gives out, usually causing more damage than would have been the case had the doubtful part been replaced when first coming under supervision. The temporary loss of a machine from this cause also antagonises the private owner and thus restricts the development and sale of private aircraft, besides discouraging the intending owner.

Surely it should be unnecessary to point out to our manufacturers that the efficient supply of spares and accessories for their own products is a paying proposition. Our car manufacturers found that out long ago; with them "Service after Sales" forms an essential part of their organisation.

"G. E."

Forthcoming Events

Club Secretaries and others are invited to send particulars of important fixtures for inclusion in the list.

Aug. 24—Sept. 1. National Gliding Competition, Sutton Bank.

Aug. 24-25. Cinque Ports Club. International Flying Meeting and Wakefield Cup Race.

Aug. 24-30. Raduno dei Littorio, Rome. Reale Aero Club d'Italia.

Sept. 6-7. King's Cup Air Race. Start and Finish: Hatfield.

Sept. 14. Cinque Ports Club. Folkestone Aero Trophy Race.

Sept. 15. Gordon Bennett Balloon Race, Warsaw.

Sept. 21. London-Cardiff Race. Cardiff Aeroplane Club.

Sept. 28. Round the Isle of Wight Air Race and Portsmouth Air Trophy.

Oct. 12-28. International Aircraft Exhibition, Milan.

RESERVE TRAINING

Some Details of Three New Reserve Schools to be Opened in the North, Midlands and West

IN last week's issue a list of those Air Ministry Civil Training Schools which have already been selected was given in the Service section. Details of several of these reserve schools have already been given in *Flight*, and information concerning three more is now available.

One, to be operated by Airwork, Ltd., at Perth, is to be opened on January 27 next year. The Perth Town Council has already given a proof of municipal farsightedness by acquiring and starting work on a first-class aerodrome site three miles north of Perth on the Coupar Angus road, and it has now shown its support of the new Air Force expansion scheme by giving permission for the Airwork Civil Flying Training School to operate from the ground in question. The Reserve School will provide twelve aeroplanes, a guaranteed 3,200 hours' flying a year and a thorough use of aerodrome facilities from the start, and the operating experience gained in this way will doubtless prove very well worth while when civil air transport begins to pull its weight in the North.

Airwork at present envisages a staff of six flying instructors, with additional instructors in Armaments, Air Navigation, Photography and Parachutes. The School will use de Havilland "Tiger Moths."

The Bristol Aeroplane Co., Ltd., has also secured a training contract. Large numbers of the R.A.F. Reserve are already receiving training at the existing Bristol school at Filton, and during the past twelve years a splendid record has been built up by the school staff in the efficient training of *ab initio* pupils and members of the Royal Air Force Reserve.

The company has purchased the major portion of an aerodrome laid out during the War at Yatesbury, Wilts. This

comprises some 250 acres of land between Jugglers Lane and the main Calne and Marlborough roads, and includes all the old aerodrome buildings in this area. The surface of the aerodrome is being entirely reconditioned, and the two largest hangars are also being brought up to date. Several new buildings are to be erected upon the site, including a considerable administration block, which will include a hospital room and garage, a generator house, petrol tank enclosure and buildings to contain the necessary apparatus for the heating of the hangars and other structures. An improved and model drainage scheme is also being installed, and squash and hard tennis courts are being laid out.

Whilst this aerodrome is well removed from any important built-up areas, the fact that it is situated only five miles from Calne and five miles from Marlborough means that it is easily accessible by road, and a certain amount of accommodation will also be available at the villages of Yatesbury and Cherhill.

The erection of the new buildings and the reconditioning of the existing hangars will naturally occupy some months, but it is hoped that the school will be in full operation by the first month in the New Year. Some of the staff from the existing school at Filton will be moved to Yatesbury to form the nucleus of the new staff, and additional pilots are being engaged to replace those leaving the original school and to complete the staff at Yatesbury.

Desford aerodrome, previously used by the Leicestershire Aero Club, has been acquired for use by another school which is to be run by Reid and Sigrist, Ltd., the instrument makers, who are under contract to the Air Ministry. The new aerodrome, which has had eighty acres added to the original area, will be ready in a few months.

A Leicester Change

FLT. LT. G. N. P. STRINGER, chief instructor to the Leicestershire Aero Club, has been appointed pilot instructor at the new R.A.F. Reserve Flying School to be established at Maidenhead. He takes up his new duties in October and his successor at Leicester airport will be appointed shortly.

"Pat" Stringer was awarded the D.F.C. for services with No. 8 (Bomber) Squadron at Aden in 1927 and 1928. He was transferred to Reserve in March, 1931. Before joining the Leicestershire Aero Club in October, 1932, he flew for P.S. and I.O.W. Aviation.

All-American Aircraft Show

HELD in the "world's largest aeroplane hangar" at Detroit City Airport at the beginning of this month, the All-American Aircraft Show does not seem to have aroused very much interest. Only seventeen aircraft were shown. One of those attracting most attention was the latest Beechcraft four-seater, for which a range of 202 m.p.h. cruising speed to 50 m.p.h. landing speed is claimed, at a cost of £2,700. The Stinson Company rented 5,000ft. of floor space but did not show anything.

A "Phoenix" Rises

WITH seating accommodation for four passengers and a pilot, the Heston Aircraft Company's "Phoenix" (Gipsy Six) was flown for the first time at the end of last week by Mr. E. Hordern. This high-wing monoplane, with retractable undercarriage, has probably the largest space per passenger of any contemporary machine and should be in demand among those who like to be really comfortable. Further details are not being released until full tests have been carried out and the machine is ready for delivery.

G.A.L. Engines

FIRST described in *Flight* of December 13, 1934, the G.A.L. V/4 is at present undergoing a series of intensive and extended flying tests in a "Moth" at Hanworth. The next engine of the series, a six-cylinder of similar design, has

completed many tests on the bench and is now being fitted to a slightly redesigned (modified windscreen and dashboard) Desoutter, so that it also can have all teething troubles thoroughly overcome before being put into production. A power of 150 h.p. for a weight of about 340lb. is expected from this smooth-running unit.

Effective Fire Extinguisher

A FILM shown last Tuesday by the Bursars Trust, of 4-5, Broad Street Place, London, E.C.2, was a convincing demonstration of the efficacy of the Pyrofluge Bomb. This apparatus, of Italian origin, is a chemical bomb which explodes under heat and releases a fire-extinguishing gas claimed to be non-injurious to human and animal life. During the demonstrations shown in the film, which took place at Rome, in the Vatican, and at Brussels, large fires of every kind, from tubs of flaming oil, buildings and piles of timber, to ships on fire, were extinguished with rapidity and apparent ease. The bomb is mounted on a stick, and this can be held in the hand with impunity during an explosion. An English company is being formed to handle manufacture in this country. A public demonstration is being given later in the month.

The Modern Diesel

THE third edition of the handbook "The Modern Diesel" has just appeared. This work has come to be accepted as the standard small textbook on high-speed compression-ignition oil engines, and covers the whole development of this type of engine from its inception to the latest types. This third edition is considerably enlarged and deals with the principles of compression-ignition as well as giving illustrated descriptions of modern Diesel engines for road vehicles, vessels and aircraft. The Diesel railcar is mentioned and its use and future discussed.

The section on aircraft engines deals with the various types produced to date, and in particular the description of the new Salmson two-stroke will be found interesting. "The Modern Diesel," third edition, is published by Iliffe and Sons Ltd., and can be obtained from Dorset House, Stamford Street, London, S.E.1. The price is 3s. 6d. net and 3s. 9d. by post.

THE FOUR WINDS

ITEMS OF INTEREST FROM ALL QUARTERS

To Keep the Peace

Fourteen aeroplanes are being stationed at Djibouti, the French Somaliland port, to help preserve order in the adjacent territory in the event of an Italo-Abyssinian war.

Every Penny Helps

Patriotic Germans who wish to view the skeleton of the new Zeppelin LZ.129 are admitted to the hangar at a charge of 6d. Workers in parties may see the ship for a penny a head.

Swift Death in Portugal

A Portuguese military machine was blown to pieces when a 20lb. bomb which it was carrying, exploded at 7,000 ft. The bodies of the occupants were picked up over 2,000 yards apart.

After You, Madam

M. Grohovski, a prominent Russian aircraft designer, says: "Give your woman pilot two months holiday each year and six months special leave every two or three years so that she can have her babies, and she will prove superior to male pilots under all circumstances." He goes on to say that the insensitivity of women to the effects of altitude will be of vital importance in the next air war.

Twenty-five Years Ago

From "Flight" of Aug. 20, 1910.

"... Surely the present thirst for speed is making aviators forget that a very much more important point is the ability to go slowly. There the biplane still has an unchallenged lead. On almost any monoplane save the Antoinette (an exception due to its wing area), a speed of less than 30 m.p.h. is hardly possible. The Wright machine is still unrivalled for travelling slowly, it being possible for a skilful pilot, such as the Count de Lambert, to average 25 m.p.h. for considerable periods of time."



WHAT'S IN A NAME? A pair of Arado single-seater fighters (B.M.W. engines) of Germany's "Richtofen" squadron. The machines are businesslike and, judging from films of their work, their pilots know how to use them. Features of interest to British eyes are the wire-braced undercarriage and peculiar exhaust pipes.

A Soviet Speciality

A feature of the Soviet National Air Meeting held near Moscow on Sunday was the simultaneous descent from six large bombers of 150 parachutists. Trained dogs equipped, presumably, with parachutes operated by static lines, were also dropped overboard.

Britain, Take a Bow!

A well-known Continental pilot of Douglas's, who flew the "Pegasus"-engined version of the D.C.2 the other day, said that it was superior to any Douglas he had flown, and that the take-off and smoothness were a great improvement over the standard D.C.2.



ON DUNSTABLE DOWNS. Ground instruction at the camp organised by the London Gliding Club. All grades of gliding and soaring aircraft are provided for the campers, and comprehensive courses of instruction are available.

FOR THE NEW SQUADRONS II

(Continued from p. 183)

Continuing the Review of Machines being Built Under the Expansion Scheme: Light Bombers, "A.C." and "G.P." Types, a Coastal Reconnaissance Machine, Two T.S.R.s and a New Amphibian Discussed



A large number of "Wallaces" with enclosed cockpits are under construction at the Westland works. (Flight photograph.)

WITH the redesignation of classes and the multitudinous variations and reclassifications of basic designs, it is somewhat difficult to grasp the situation in the matter of bombing equipment. Before proceeding to discuss future developments in this field some clarification of the position may be of assistance.

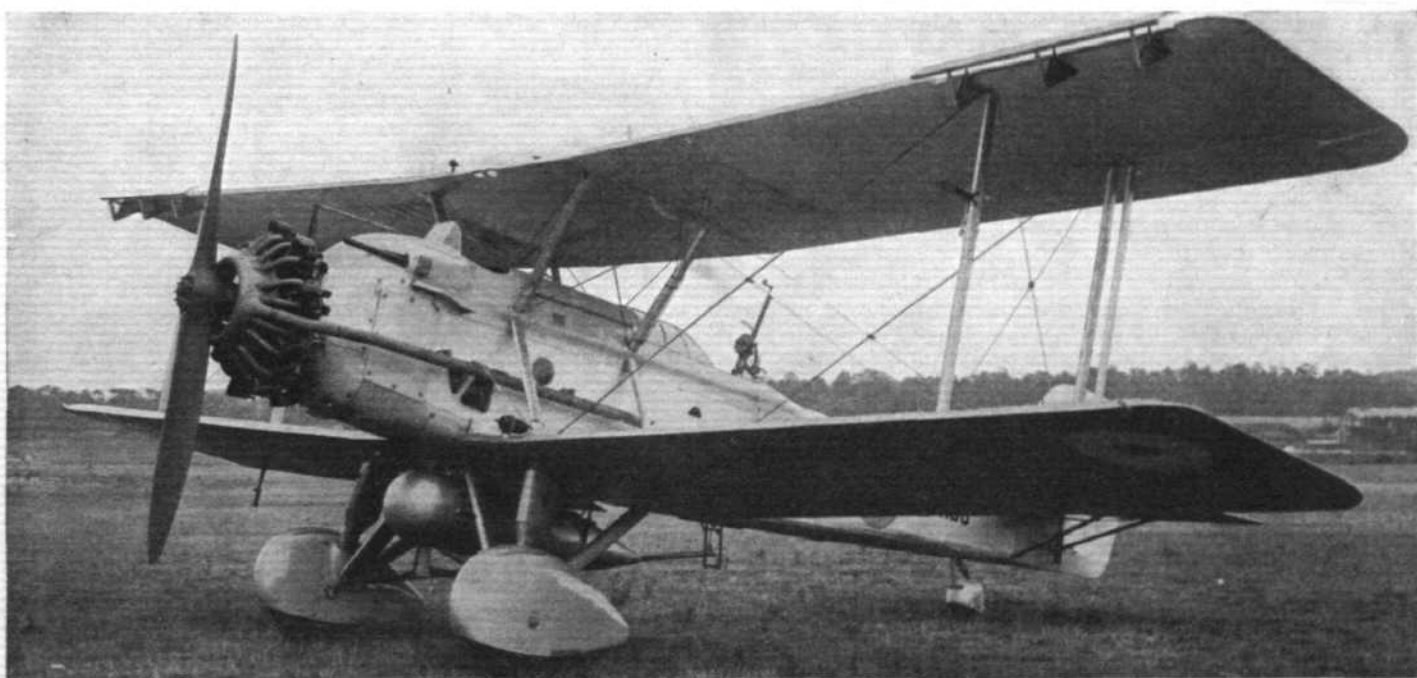
At present three classes of bombers are recognised in the R.A.F. These are known as light, medium and heavy types. The former is typified by the "Hart," a small single-engined two-seater biplane carrying about 500 lb. of bombs over comparatively short distances, and capable of making diving attacks in addition to those of the horizontal variety. It must be realised that, in addition to specialised light bombers, the heavier general purpose types are grouped in the light bomber class.

As we know it now the medium bomber is a twin-engined type using the same power as the "heavies" or even more, but capable of a rather higher performance. It can be used by night and day. The heavy bombers are twin-engined types (both biplane and monoplane types have been adopted) carrying a heavier bomb load than the

"medium" class, and having a rather longer range.

There are indications that we shall see a general *renaissance* among our bombers. The specialised light bomber is likely to remain with us for at least a few more years. It may, or may not, be supplanted eventually by the very fast medium bomber—most likely a multi-engined monoplane with internally stowed bombs and a considerably longer range than the present "light" types—or it may gradually merge into the general purpose class. In the heavy field we may expect a great improvement in performance and also, it seems, an increase in size.

The immediate future will see an improved type of light bomber introduced into the Service. This is the Hawker "Hind" with 600/640 h.p. "Kestrel V" supercharged engine. It is virtually a "cleaned up" and re-engined "Hart." The "Harts" at present in Service are fitted with the 525 h.p. "Kestrel IB," a naturally aspirated unit, "throttle-gated" to 3,000ft. The series V "Kestrel," being rated at 11,000ft. (its full-throttle height is 14,000ft.), should prove highly beneficial. The recent Air Exercises demonstrated at what altitudes light bombers



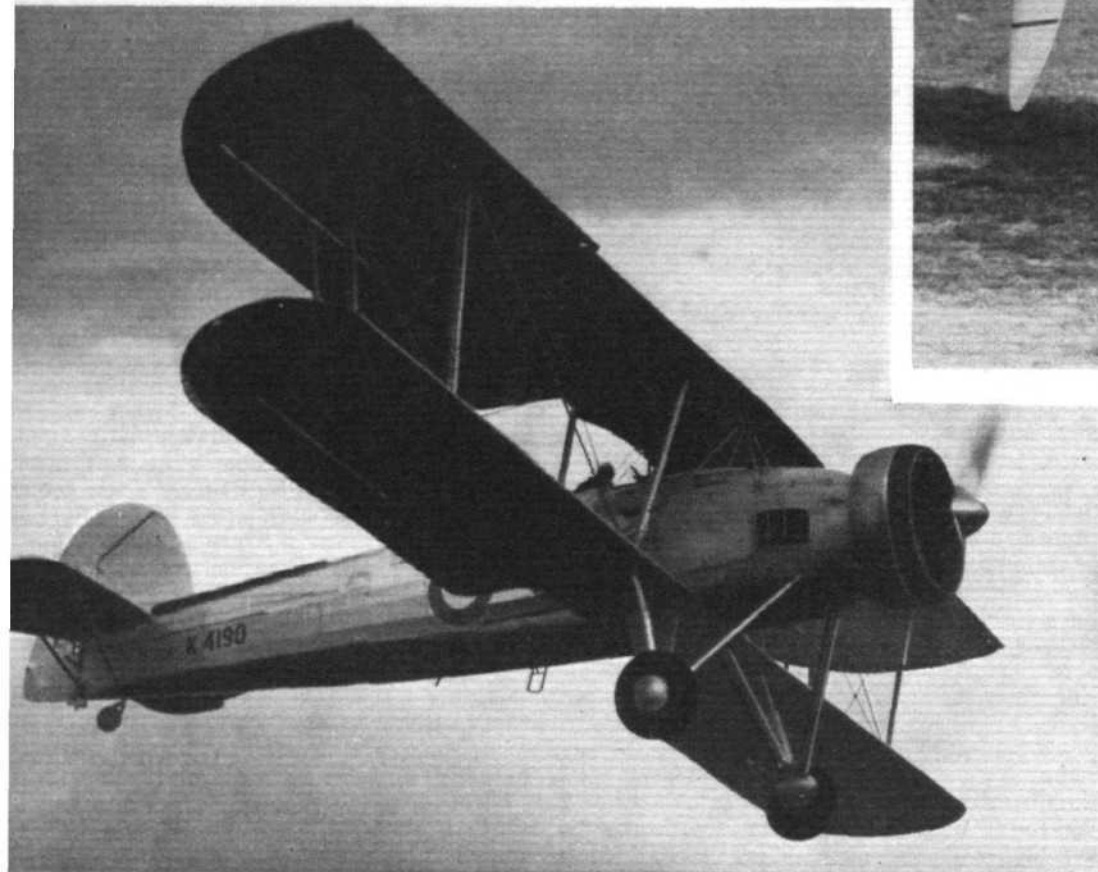
The Vickers "Vincent" ("Pegasus IIM"), seen here with its long-range tank in position, is now being issued to a number of units overseas. (Flight photograph.)

are required to fly: 20,000ft. is hardly considered abnormal. The extra power afforded by the new engine should also be of use in climbing out of the range of anti-aircraft guns after a dive-bombing attack. A spectacular all-round performance is obtained with the new combination, the maximum speed being about 200 m.p.h. Armament and equipment remain substantially the same as in the "Hart."

Apart from the "Hart" the machines at present grouped in the light bomber class are really G.P. types. There is actually a variation of the "Hart" among their number, this version being known



"Anson" is the official name of the Avro coastal reconnaissance monoplane (2 "Cheetah IX"). A very large order for these machines has been placed.



One of two torpedo spotter reconnaissance types to be adopted is the Fairey "Swordfish" with 690 h.p. "Pegasus III." (Flight photograph.)

as the "Hardy." It uses the "Kestrel IB" at present, although it is probable that later issues will have supercharged "Kestrels." Externally the machine is practically indistinguishable from the "Audax," with its long exhaust pipes and message book attached to the axle. Its internal equipment, however, is more comprehensive, including as it does the desert equipment demanded for work in the Middle East. The majority of this was shown in a drawing published in *Flight* of June 28 last year.

The Westland "Wapiti," Fairey IIIF and Fairey "Gordon" are all obsolescent and are being superseded by Hawker "Hardies," Vickers "Vincents," and Westland "Wallaces."

A development of the "Vildebeest" torpedo-bomber, the "Vincent," generally resembles the earlier machine. The "Pegasus IIM" medium supercharged engine is fitted, giving a maximum speed, at 5,000ft., of 142 m.p.h. Including crew and fuel the normal disposable load is 3,850lb.; the tare weight is 4,250lb.—a highly creditable figure in view of the great load carried. With normal tankage the range is 625 miles, cruising at 121 m.p.h., but when an auxiliary tank is slung beneath the fuselage this figure is doubled.

Another highly interesting general purpose machine of which a large number of examples are being built for the R.A.F., is the Westland "Wallace" biplane with enclosed cockpits. The power plant is similar to that of the "Vincent," but as the machine is rather lighter and smaller, the performance is higher, the top speed at the critical altitude being about 160 m.p.h. With long-range tanks the range is 1,000 miles. A description of the ingenious cockpit enclosure system was given in our issue



"Dagger III" engines destined to equip one squadron of Hawker "Audax" Army co-operation machines are being built at the Napier works. Here a "Dagger" is shown installed in a "Hart." The "Audax" installation will be slightly different. (Flight photograph.)



of June 14, 1934. Easy egress is provided for emergencies.

At the present time, a batch of general purpose types, the products of various manufacturers, are still undergoing competitive trials. Almost without exception they are equipped to carry torpedoes in addition to having provision for the present G.P. load. Several are capable of being used as dive bombers, and one, a Hawker "private venture," specialises in this form of attack. There has been an abundance of rumours these last few months as to which types have been ordered in quantity. So far no official announcement has been made.

In the Army co-operation class there will appear, very soon, the Hawker "Audax" with 24-cylinder Napier "Dagger" air-cooled engine. Enough of these engines to equip one squadron of "Audaxes" are now going through the Napier shops. They are of the Series III type, moderately supercharged and normally rated at 700-725 h.p. at 3,500ft. The maximum power is said to be 805 h.p. These engines will give the "Audaxes" an outstanding performance at a fairly low altitude—one of the foremost requirements in an A.C. machine. Whether the "Kestrel I.Bs" in the present "Audaxes" will be replaced by the latest type "Kestrel" or by "Daggers" does not appear to have been decided. Farnborough is developing an exhaust system for the "Dagger-Audax."



A contract for a number of "Walrus" fleet spotter reconnaissance amphibians has been placed with the Supermarine Aviation works.

There are two torpedo bomber squadrons in operation which are not units of the Fleet Air Arm. Both are equipped with the "Vildebeest." Whether more "Vildebeests" will be issued to additional squadrons of this nature is not known. Possibly the Air Ministry will wait until one of the torpedo-carrying general purpose types has been adopted: certainly it is exhibiting increasing interest in the subject of coastal defence.

Within the past few weeks an extensive order for coastal reconnaissance machines has been announced. The contract has gone to the Avro company for its "Anson" monoplane, a military development of the civil type 652, a pair of which has been delivered to Imperial Airways for feeder line work. The prototype "Anson" is fitted with a pair of 290 h.p. Siddeley "Cheetah VI" seven-cylinder air cooled radials, but it is understood that the production machines will have the new "Cheetah IX," a moderately supercharged engine rated at 300-310 h.p. at 6,000ft. Possibly trailing edge flaps and variable pitch airscrews will be incorporated; the undercarriage is retractable. The speed with the new power plants should be over 190 m.p.h., which will be a great asset during long reconnaissance missions and patrols. A compartment for the bomber is located in the nose, and is followed by the pilot's cockpit, navigator's compartment, wireless operator's station, and a gun turret of the Armstrong Whitworth type. The pilot is armed with a fixed Vickers gun—an unusual feature in a twin-engined machine.

The coastal reconnaissance machine is not the only new class to be introduced into the R.A.F. Torpedo spotter reconnaissance aircraft are being delivered to units of the Fleet Air Arm. The T.S.R. type is designed to function as a torpedo carrier, bomber, spotter or reconnaissance machine. Two types have been adopted, the products of the Blackburn and Fairey companies respectively. The Blackburn "Shark" is fitted with the 700 h.p. Siddeley "Tiger IV" fourteen-cylinder moderately supercharged radial. As a torpedo bomber it has a disposable load of 3,831lb., and makes a top



The nose of the Blackburn "Shark" "Tiger" - engined T.S.R. biplane, showing how the 18-inch torpedo is carried. (Flight photograph.)

speed of 152 m.p.h. at 5,500ft. There is a possibility that future "Sharks" will receive the new "Tiger VI" which gives a considerably higher output.

The second T.S.R. type to be ordered in quantity is the Fairey "Swordfish" with 690 b.h.p. "Pegasus III" engine. This is a two-bay fabric-covered biplane.

A contract has been placed with the Supermarine Aviation works for a number of "Walrus" amphibians for work with the Fleet Air Arm. The "Walrus" is the R.A.F. version of the "Seagull V" machine ordered by the Australian Government.

(To be continued next week.)

KING'S CUP ENTRIES

36 Machines Entered : 17 Main Types : 29 Low-wing Monoplanes

NOW that the Royal Aero Club has issued the final list of entries for the King's Cup Air Race, which is to take place on September 6 and 7 next, and which will start and finish at the de Havilland aerodrome, Hatfield, it is possible to analyse the field.

It may be recollected that the competing machines are divided into those with engines of 150 h.p. and those with more powerful engines, and that the fastest ten from each class will pass into the final, which will thus comprise twenty aeroplanes.

The list of entries discloses the fact that the thirty-six aeroplanes are divided into seventeen main types, classing all the Miles "Hawks" as one type, which, of course, they are not. Out of a total of thirty-six machines no less than thirty-three are monoplanes, and of these twenty-nine are low-wing monoplanes.

Philips and Powis are represented by the greatest number of entries, with no less than ten "Hawks" of various sorts, two plain, two "Trainers," two "Majors," two "de Luxe," one "Mark II" and one "Mark V." In addition, there are two "Falcons."

Next comes Capt. E. W. Percival with seven "Gulls" and one "Mew Gull." The De Havilland Aircraft Co., Ltd., is to be represented by five machines: two "Leopard Moths," one "Comet," one "D.H.90," and one "T.K.2." There will be three aeroplanes by the British Aircraft Manufacturing Co., Ltd., and also three Comper monoplanes.

On the engine side there is a vast preponderance of de Havilland products. Of the forty engines in the race (four twin-engined machines have been entered) thirty-six are "Gipsies" of one sort or another.

| Racing No. | Section. | Reg. Marks. | Entrant. | Pilot. | Aircraft. | Engine. |
|------------|----------|-------------|---------------------------------|--|------------------------------|--------------------------|
| 1 | B | G-ADEF | Cyril Nicholson .. | T. Campbell Black .. | D.H.88 Comet .. | 2 Gipsy VI R. |
| 2 | B | G-ACND | H.R.H. The Duke of Kent. | E. W. Percival .. | Percival Mew Gull .. | Gipsy VI. |
| 3 | B | G-ACTC | Sir John Kirwan .. | Flt. Lt. R. Duncanson | Hendy Heck .. | Gipsy VI. |
| 4 | B | G-ADNA | Capt. G. de Havilland | G. R. de Havilland and P. de Havilland | D.H.90 .. | 2 Gipsy Major. |
| 5 | B | G-ACTE | William Humble .. | William Humble .. | Miles Hawk Speed Six | Gipsy VI. |
| 6 | B | G-ADGP | L. Fontes .. | L. Fontes .. | Miles Hawk Speed Six | Gipsy VI. |
| 7 | B | — | Miss R. Slow .. | Miss R. Slow .. | Miles Hawk Speed Six Mk. II. | Gipsy VI. |
| 8 | A | G-ACNC | F. B. Worman .. | P. de W. Avery .. | Comper Streak .. | Gipsy Major. |
| 9 | A | — | G. A. Hebden .. | F. G. Miles .. | Miles Hawk M.5 .. | Gipsy Major. |
| 10 | B | G-ADFA | Peter Mursell .. | C. E. Gardner .. | Percival Gull .. | Gipsy VI. |
| 11 | B | G-ADEP | E. W. Percival .. | — | Percival Gull .. | Gipsy VI. |
| 12 | B | G-ACUP | Diana Mary Williams | T. W. Morton .. | Percival Gull .. | Gipsy VI. |
| 13 | B | G-ADMI | W. R. Porter .. | S. W. Sparkes .. | Percival Gull .. | Gipsy VI. |
| 14 | B | G-ACPA | S. L. Turner .. | S. L. Turner .. | Percival Gull .. | Gipsy VI. |
| 15 | B | G-ADLS | Samuel Harris .. | L. Lipton and S. Harris. | Miles Falcon .. | Gipsy VI. |
| 16 | B | G-ADLC | Viscountess Wakefield of Hythe. | T. Rose .. | Miles Falcon .. | Gipsy VI. |
| 17 | B | G-ADLL | O. G. E. Roberts .. | O. G. E. Roberts .. | Monospar S.T.12 .. | 2 Gipsy Major High Comp. |
| 18 | A | — | Viscount Wakefield of Hythe. | H. S. Broad .. | T.K.2 .. | Gipsy Major. |
| 19 | B | G-ACLT | Sir Charles Rose, Bt. | Sir Charles Rose, Bt. | Airspeed Courier .. | 2 Lynx IV c. |
| 20 | A | G-ABWH | W. L. Hope .. | — | Comper Swift .. | Gipsy III. |
| 21 | A | G-ABWW | R. O. Shuttleworth .. | R. O. Shuttleworth .. | Comper Swift .. | Gipsy III. |
| 22 | A | G-ADGE | A. H. Cook .. | A. H. Cook .. | Miles Hawk Coupé .. | Gipsy Major. |
| 23 | A | — | S. A. Sadler .. | F. D. Bradbrooke .. | Miles Hawk Major .. | Cirrus Major Special. |
| 24 | A | — | A. Henshaw .. | A. Henshaw .. | Miles Hawk Major .. | Cirrus "R." |
| 25 | A | G-ADLR | Charles Best .. | John Armour .. | B.A.3 Cupid .. | Gipsy Major. |
| 26 | A | — | C. S. Napier .. | Flt. Lt. E. T. C. Edwards. | Percival Gull .. | Cirrus Major. |
| 27 | A | G-ACRG | John Fox .. | Flt. Lt. J. B. Wilson | B. A. Eagle .. | Gipsy Major. |
| 28 | A | G-ADMW | Antony C. W. Norman | Antony C. W. Norman | Miles Hawk Major .. | Gipsy Major. |
| 29 | A | G-ADLA | Mrs. E. Battye .. | Mrs. E. Battye .. | Miles Hawk Major .. | Gipsy Major. |
| 30 | A | G-ACPU | E. L. Gandar Dower | Angus Irwin .. | B. A. Eagle .. | Gipsy Major. |
| 31 | A | — | C. J. Melrose .. | C. J. Melrose .. | Percival Gull .. | Gipsy Major. |
| 32 | A | G-ADLB | Major G. W. G. Allen | O. Cathcart Jones .. | Miles Hawk Trainer .. | Gipsy Major. |
| 33 | A | G-ADLN | R. Cornwall .. | H. R. A. Edwards .. | Miles Hawk Trainer .. | Gipsy Major. |
| 34 | A | G-ACHC | Sir Derwent Hall Caine. | Sir Derwent Hall Caine. | D.H.85 Leopard Moth | Gipsy Major. |
| 35 | A | G-ACUO | J. M. Barbour, Jr. .. | J. Barbour and E. Gairdner. | D.H.85 Leopard Moth | Gipsy Major. |
| 36 | B | G-ABME | A. H. Tweddle .. | A. H. Tweddle .. | Avro Avian Mk. IV M. | A.S. Genet Major 7-cyl. |

A = Engine not exceeding 150 b.h.p.

B = Engine over 150 b.h.p.

1909—1935! As then so now, a French pioneer crosses the Channel in a machine of his own creation. M. Henri Mignet in his "Pou-du-Ciel" approaching Folkestone on August 13th.



L'AUTRE AVIATION

Henri Mignet Flies in England : Air Ministry Test Suggested

By C. N. COLSON

LAST Saturday M. Henri Mignet, ably assisted by Madame Mignet, flew his "Pou" at Shoreham Airport. This was the first of a series of demonstrations taking place in England during the next three weeks.

Flight has kept its readers fully abreast of "Pou" developments since M. Mignet first announced, to a somewhat sceptical French flying public, that he was going to fly without ailerons or rudder-bar, and that he was going to do it with greater safety than is provided in normal aeroplanes. It was, therefore, with the greatest interest that I went to Shoreham last week-end to see this interesting pioneer himself.

He is not at all the dogmatic type of inventor usually associated with radical developments. He is just a vivacious Frenchman of small build, with a *petite* and equally vivacious wife. Together they have undoubtedly produced a machine worthy of the closest investigation. Opinions differ as to whether safety in the air is to be obtained by the elimination of the ailerons or the rudder. There are both schools of thought among aircraft designers, but so far there has been more experiment

with machines lacking a tail rudder than with those lacking

aileron, as, for example, the "Pterodactyl" in England and the Waterman "Arrowplane" in the U.S.A.

After seeing the "Pou" and its flying capabilities I feel that any money involved would be well spent if the Air Ministry were to acquire a "Pou" and test it thoroughly with a view to giving all manufacturers the benefit of the result of the tests. It is too early to say whether "there is anything in it," but it certainly seems a promising path down which Martlesham Heath or Farnborough might well send some of their experts at Government expense.

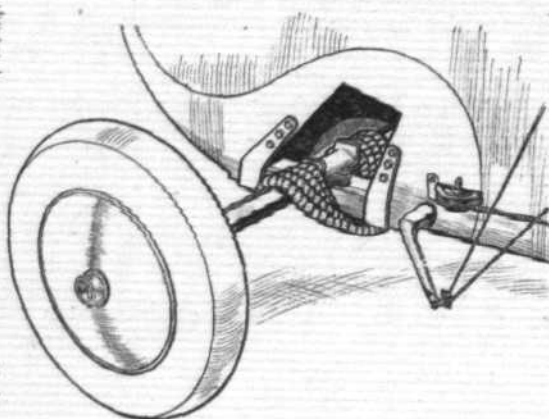
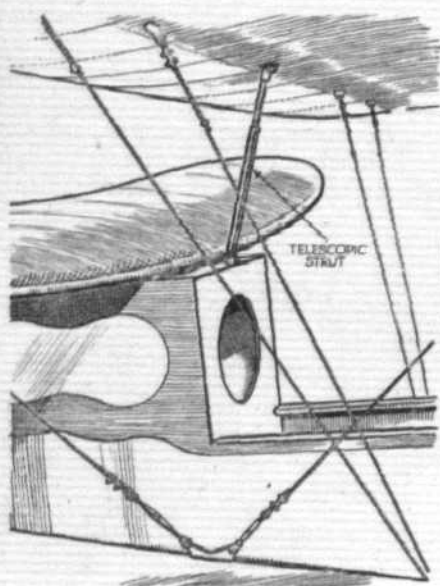
On Saturday M. Mignet was flying a new machine built for him by Felix Louis, a French aircraft constructor, at Pantin, with the Aubier et Dunne two-cylinder inverted two-stroke engine (*Flight*, April 11, 1935). The machine was well made for its type, although certain details are a little crude in comparison with English aeronautical practice. Apparently M. Mignet is so busy with demonstrations that he now has little time for building his own machines, and, with the exception of a two-seater, in which he is going to teach Madame Mignet to fly, he has no construction on hand at the moment. I learnt that he has now flown some 145 hours in "Pous" and that, contrary to general belief, he has tried piloting conventional aircraft, but I gather that the results did not encourage him to continue; in fact, they made him more than ever convinced that his "Pou" was a better method of flying.

Before making his demonstration he broadcast a talk about flying and the "Pou," describing the latter amusingly as "a small insect which has made people in France scratch their heads."

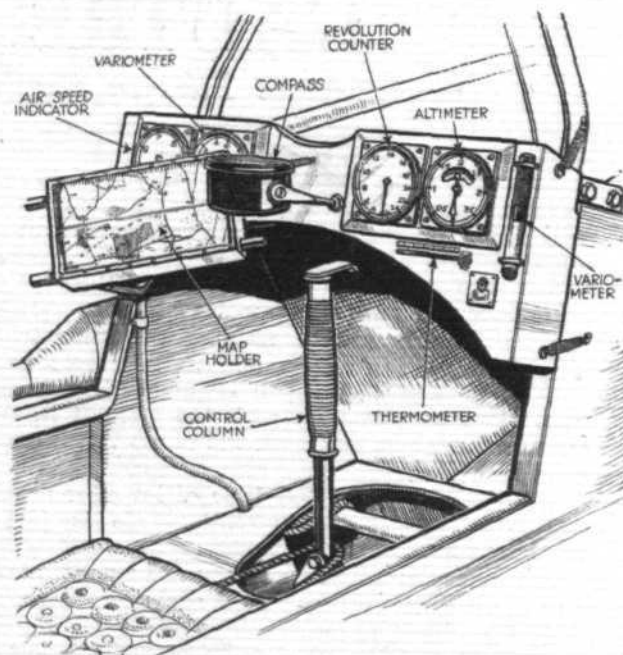
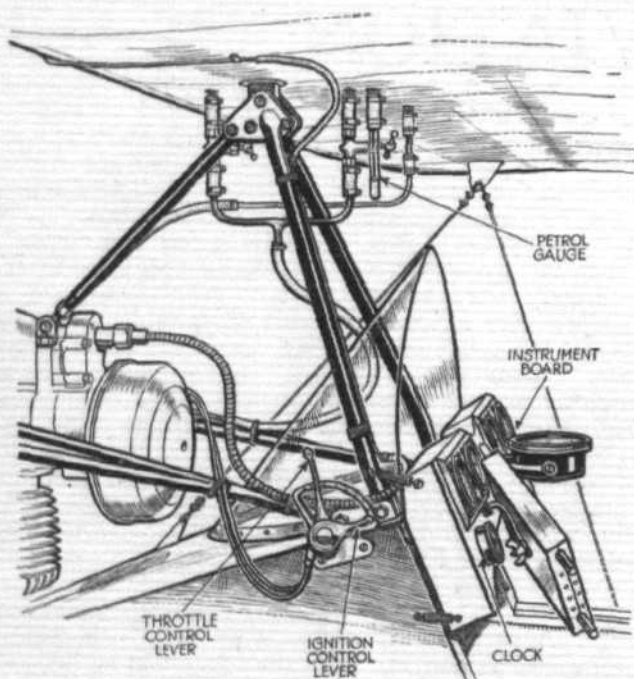
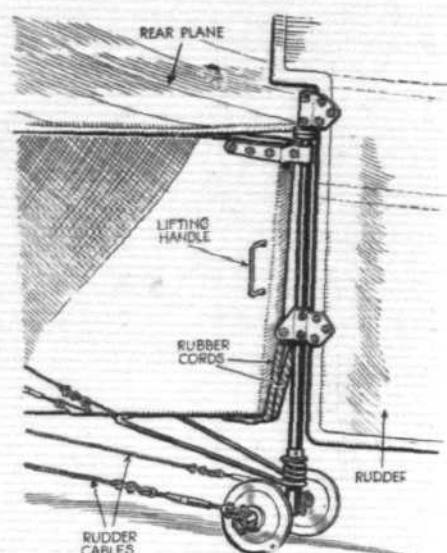
Starting up seemed to call for a considerable amount of energy. The airscrew had to be twirled round many times before the engine was deemed ready, and then the actual start appeared to be dependent upon swinging the airscrew so hard that it turned over several compressions. The cockpit contained quite an array of instru-

M. Mignet "trundling" his "Pou" on Lympe aerodrome. The engine is an Aubier et Dunne two-stroke.





(Centre) the simple undercarriage springing; (left) the sprung strut which supports the trailing edge of the front wing; (right) the springing and operation of the sternpost with rudder and double tail wheel.



On the left our artist shows a side view of the cockpit, with the engine controls and fuel supply arrangements; on the right is the roomy cockpit with its instrument lay-out and pilot's seat.

ments. Across the ample-sized dashboard, from left to right, I saw an A.S.I., a variometer, a revolution counter, an altimeter, and a home-made variometer. Beneath them were: clock, compass, and air thermometer.

There has, according to reports, been a large number of crashes in France among the fifty "Pous" which are already flying out of the 500 being built, and most of these crashes are said to have occurred during the take-off. I therefore watched this initial stage of the flight very closely. I asked M. Mignet if there was any special difficulty to be anticipated during the stage when the machine was gathering speed over the ground, but he did not seem to think that the controls need be touched very much. Certainly his own take-offs showed no signs of any necessity for coarse use of the rudder.

The "Pou" seemed extremely easy to manage on the ground, and the steerable tail wheel turned it in its own

length without difficulty. In flight there was evidence of adequate control even when doing steep turns close to the ground and the spectators, but somehow the general feeling could not have been better summed up than by the remarks of a small girl, aged about four years, to her equally small brother when her piping, pedantically correct wording announced: "It doesn't appear to be very safe, Harold; it looks as if it might slide to one side at any moment!" It somehow didn't look as if the pilot was always certain of what it was going to do. This was probably because lateral stability is dependent upon the large dihedral angle and use of the rudder; the result is a sort of swaying recovery when a wing drops.

The take-off was only a very few yards long, and the landing equally short; even a landing from altitude without the engine running was carried out without apparent difficulty as the glide was very steep.

"Pou" News in "Flight"

REGULAR readers of *Flight* will have seen the many articles which have appeared about the "Pou-du-Ciel," but for the benefit of those who may have missed some of the numbers we tabulate below the dates upon which the more important items were published: September 20, 1934; March 28, April 11, April 18 (2), April 25, May 9, July 11 (2), July 18, August 1, August 15 (3), 1935.

A "Pou" on Show

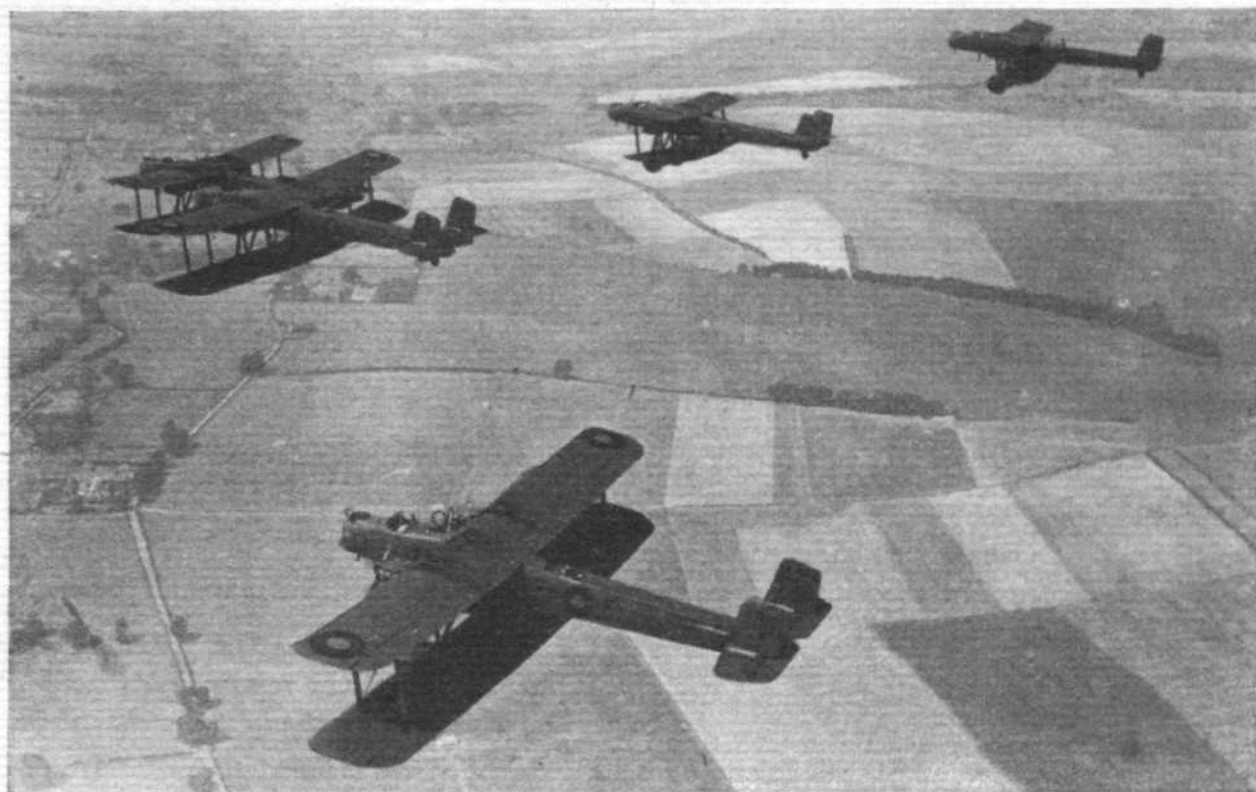
THE "Pou-du-Ciel" which has been built by Air League amateurs from instructions contained in the book *The Flying Flea*, is now on exhibition in the basement of Selfridge's new building. An Aubier et Dunne air-cooled engine is fitted, and the machine is finished in black and white. M. Henri Mignet has promised to fly it before he leaves England at the end of his present tour.

THE ROYAL AIR FORCE

SERVICE NOTES AND NEWS



AIR MINISTRY ANNOUNCEMENTS



No. 10 (BOMBER) SQUADRON. A flight of five Handley-Page "Heyfords" flying in formation by day. Last week this squadron made night raids on Portsmouth and was very successful in evading the searchlights. (Flight photograph.)

HONOURS

The following honours were published in the *London Gazette* dated July 26, 1935:—

G.C.V.O.

Marshal of the Royal Air Force Hugh Montague, Baron Trenchard, G.C.B., D.S.O. (Dated July 20, 1935.)

Air Chief-Marshal Sir Henry Robert Moore Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., A.D.C. (Dated July 6, 1935.)

C.V.O.

Air Vice-Marshal Patrick Henry Lyon Playfair, C.B., M.C. (Dated July 6, 1935.)

M.V.O.

Wing Commander Percy Eric Maitland, A.F.C. (Dated July 6, 1935.)

LONG SERVICE AND GOOD CONDUCT MEDAL

The Long Service and Good Conduct Medal has been awarded to the undermentioned airmen:—

W.O.s. Avery, L., White, A. E., Flt. Sgts. Balshaw, J., Bentall, W., Bushell, A. H., Element, V. E., Gilbert, A. J., Hargreaves, J. E., M.M., Huggard, A. J., Hughes, A. S., Lawrence, R., Mann, T. L., McCartie, M., Mills, W. L., Rowley, W., Spivey, P. H., Tilbury, W., Walker, G. E. H., Sgts. Clarke, F. W., Coote, A. E., M.M., Free, T. P., Goffe, C. R., M.M., Graddage, A. E., Grimwood, J. L., Michelle, C. J., Miles, F. J., Munson, S. C., Parsons, C. G., Pinchen, H., Sherwood, A. C., Thomas, H., Walster, W., Cpls. Baker, W., Bolton, W., Bridge, C. K., Brown, B., Franklin, H., Fuller, F. H. E., Fieldhouse, A., Grace, L. C., Harvey, H. H., M.M., Hennessy, J., Knowlton, H. G., Larman, J. F., McKeen, J., M.C., O'Brien, H. H., Shepherd, F. J., Thickpenny, H. S., Watts, F. E., L.A./C./A./Cpl. Williams, H.

*Deceased

NOMENCLATURE OF AIRCRAFT—"GLADIATOR"

The official name of the Gloster single-seater fighter fitted with "Mercury" engine is "Gladiator."

SEARCHLIGHT PRACTICE AT PORTSMOUTH

On the nights of August 13, 14, 15, raids by No. 10 (Bomber) Squadron were made on Portsmouth in order to practise Territorial Army searchlight battalions who were in camp in the neighbourhood. Only a few guns were manned and no firing took place. Fifty searchlights were at work, and the Observer Corps had various posts manned. The searchlights were not at all successful in picking up the night raiders. Possibly they were accustomed to working with "Virginias" and were confused by the greater speed of the "Heyfords." Probably the old patterns of searchlight and sound-locator were not equal to the task. The following Territorial Army units took part in the exercise: 57th (Wessex) Anti-Aircraft Brigade, R.A.; Hampshire (Fortress) R.E.; Devon and Cornwall (Fortress) R.E.; 27th (London) Anti-Aircraft Searchlight Battalion, R.E.; Surrey Group, Anti-Aircraft Searchlight Companies, R.E.; Cinque Ports (Fortress) R.E.; and Essex (Fortress) R.E.

No. 4 FLYING TRAINING SCHOOL

The undermentioned officers and airman pilots have been awarded special assessments as shown hereunder, on completion of a course of *ab initio* flying training at No. 4 Flying Training School, Abu Sueir:—

Special Distinction

A./Sgt. Davidge, E.

Distinguished Pass

A.P/O. G. M. Fidler, A./Sgt. Watts, P. H., A.P/O. W. I. Scott, A.P/O. W. F. Barton, A./Sgt. Fraser, E. G.

R.A.F. BENEVOLENT FUND

The usual meeting of the Grants Committee of the above Fund was held at Iddesleigh House on Wednesday, August 7. Mr. W. S. Field was in the chair, and the other member of the Committee present was: Group Capt. C. H. K. Edmonds, D.S.O., O.B.E. The Committee made grants to the amount of £372 15s. 6d.

On Friday, August 16, the same Committee made grants to the amount of £307 14s. The next meeting was fixed for August 27.

SPECIALIST SIGNALS COURSE

The undermentioned officers, having successfully completed the specialist signals course at the Electrical and Wireless School, Cranwell, which terminated on June 22, 1935, are granted the symbol "S":—

F/O.s L. J. Crosbie, A. T. Monks, W. T. H. Nichols, W. P. G. Pretty, R. C. Richmond, A. M. Rodgers, T. U. C. Shirley, J. A. Tester, H. B. Wrigley.

F/O. J. A. Tester has been selected to attend the specialist "S" course at Cambridge University.

RECRUIT TRAINING CENTRE

Part of the old Ministry of Pensions Hospital at Orpington, Kent, where there is accommodation for more than 2,000 men, will be taken over temporarily by the Royal Air Force as a training centre for new recruits.

Early next month 800 officers and other ranks will be drafted to Orpington.

FOREIGN OFFICER WITH THE R.A.F.

Capt. A. Gamboa, of the Peruvian Flying Corps, having completed his training at the Central Flying School, to which he was attached from April 8 to July 5, 1935, will be attached to No. 25 (Fighter) Squadron from August 16 to August 31, 1935, and to the Air Navigation School from September 2 for one month.

ELECTRICAL AND WIRELESS SCHOOL

The following are extracts from the report by Grp. Capt. H. Gordon-Dean, A.F.C., Commanding Officer, at the Passing Out Inspection of the September, 1932, Entry of Aircraft Apprentices, Electrical and Wireless School, Cranwell, last month. The inspecting officer was Air Vice-Marshal H. M. Cave-Brown-Cave, D.S.O., D.F.C.

The original strength of the entry now passing out was seventy. These were allocated to trades as follows: 40 Wireless Operator Mechanics, 20 Electricians, and 10 Instrument Makers. On the

reorganisation of the electrical trades, twenty aircraft apprentices under training as electricians and three under training as instrument makers were remustered for training as wireless operator mechanics. One apprentice under training as a wireless operator mechanic remustered for training as an instrument maker and one instrument maker was transferred from the January, 1932, Entry. The final numbers for this entry were, therefore: 62 Wireless Operator Mechanics and 9 Instrument Makers.

Of the sixty-two wireless operator mechanics under training one apprentice became a casualty and one was discharged as unsuitable. One aircraft apprentice was transferred to this entry from the January, 1932, entry. Of the sixty-one aircraft apprentices now passing out in this trade, four have qualified as L.A.C., twenty-seven as A/C.1, and twenty-eight as A/C.2. One has not yet been examined owing to sickness and one has failed to qualify.

The nine aircraft apprentices under training as instrument makers now passing out have qualified as follows: Five as A/C.1 and three as A/C.2, and one has failed to qualify.

EDUCATIONAL TRAINING

This entry has pursued the usual course of instruction laid down for aircraft apprentices, comprising the principles of General Physics (with special regard to basic Electrical theory), Practical Mathematics and Mechanics, and the Principles of Mechanical Drawing, together with a course of General Studies in Empire History and Geography, Principles of Citizenship, and Appreciation of Literature.

TRAINING OF AIRMEN (WIRELESS OPERATORS)

Since the last report, sixty-two aircraftmen have completed their training to remuster as wireless operators, passing out: One as L.A.C., thirty-four as A/C.1, twenty as A/C.2, and seven failed to qualify. In addition to the above, forty-nine airmen are due to pass out during the present month.

ANTI-GAS TRAINING

All aircraft apprentices of the entry have completed the syllabus as laid down by the Air Ministry for the training of Royal Air Force personnel in Anti-Gas measures. They are equipped with a personal issue of Anti-Gas Respirators and have successfully passed the chamber and duration tests.

CADETSHIP

A Cadetship at the Royal Air Force College has been awarded to Corpl. Apprentice Philip Mervyn Wigg.

ROYAL AIR FORCE GAZETTE

London Gazette, August 13, 1935

General Duties Branch

F/O. L. J. Crosbie is granted permanent commission in this rank, August 14. F/O. C. C. Musselwhite (Captain, Middlesex Regt.) is promoted to rank of Flight Lieutenant, April 1. Acting Pilot Officer on probation W. I. Hammond is graded as Pilot Officer on probation, July 8. Group Capt. E. R. Manning, D.S.O., M.C., is placed on retired list (own request), August 10. Sqn. Ldr. R. S. Lucy, A.F.C., is placed on retired list (own request), August 1. Flt. Lt. W. A. Harvey is placed on retired list, August 14. F/O. F. Brent is transferred to reserve class A, August 6. The following Flying Officers relinquish short service commissions on transference to Royal Australian A. F. Res., August 11: D. C. T. Bennett, N. B. Littlejohn.

Memoranda

A. J. Simpson is granted honorary commission as 2nd Lieutenant with effect from September 14, 1923. The permission granted to Lt. T. L. Quinn to retain rank is withdrawn on enlistment into T.A., April 9.

ROYAL AIR FORCE RESERVE

Reserve of Air Force Officers

General Duties Branch

A. E. Ansell is granted commission as Flying Officer in class C, July 17. F/O. S. R. Sherman is transferred from class C to class A, June 22.

SPECIAL RESERVE

General Duties Branch

N. L. Westbury-Jones is granted commission as Pilot Officer on probation, July 29. Pilot Officer on probation P. A. Simpson is confirmed in rank, July 18. Flt. Lt. T. H. Worth resigns commission, May 27.

AUXILIARY AIR FORCE

General Duties Branch

No. 600 (CITY OF LONDON) (FIGHTER) SQUADRON.—A. G. Miller is granted commission as Pilot Officer, July 18.

No. 605 (COUNTY OF WARWICK) (BOMBER) SQUADRON.—H. M. Mitchell is granted commission as Pilot Officer, July 26.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Squadron Leaders.—V. Buxton, O.B.E., to No. 23 Group Headquarters, Grantham; for Personnel Staff Duties vice Sqn. Ldr. G. S. Oddie, D.F.C., A.F.C., 6.8.35. A. P. Ledger, M.B.E., to No. 40 (Bomber) Squadron, Abingdon; to command vice Sqn. Ldr. E. I. Bussell, 6.8.35. A. P. Ritchie, A.F.C., to No. 35 (Bomber) Squadron, Bircham Newton; to command vice Sqn. Ldr. V. Buxton, O.B.E., 6.8.35. Act. Wing Cdr. S. B. Harris, D.F.C., A.F.C., to Royal Air Force Staff College, Andover; for duty as Instructor vice Wing. Cdr. D. Colyer, D.F.C., 6.8.35. R. Jope-Slade, O.B.E., D.S.C., to Air Ministry (Dept. of C.A.S.) (D.O.I.), vice Sqn. Ldr. A. P. Ledger, M.B.E., 7.8.35. E. Thornton, to No. 504 (County of Nottingham) (Bomber) Squadron, Hucknall; to command vice Wing Cdr. H. S. Kerby, D.S.C., A.F.C., 5.8.35.

Flight Lieutenants.—A. R. Combe, to R.A.F. Station, Tangmere, 29.7.35. A. H. H. Macdonald, to Headquarters Central Area, Abingdon, 31.7.35. M. Q. Candler, to No. 209 (Flying Boat) Squadron, Felixstowe, 6.8.35. L. Crocker, to No. 210 (Flying Boat) Squadron, Pembroke Dock, 6.8.35. G. H. Stainforth, A.F.C., to H.M.S. *Glorious*, 6.8.35. E. M. Drummond, to Headquarters, Air Defence of Great Britain, 7.8.35.

Flying Officers.—D. Sloan, to No. 24 (Communications) Squadron, Hendon, 3.8.35. T. C. Chambers, to Headquarters, Coastal Area, Lee-on-the-Solent, 24.6.35.

Pilot Officers.—W. G. Bannister, to No. 33 (Bomber) Squadron, Upper Heyford, 27.7.35. W. F. Beckwith, to No. 7 (Bomber) Squadron, Worthy Down, 27.7.35. G. H. Foss, to No. 101 (Bomber) Squadron, Bicester, 27.7.35. P. E. Hadow, to No. 58 (Bomber) Squadron, Worthy Down, 27.7.35. E. A. Howell, to No. 16 (Army Co-operation) Squadron, Old Sarum, 27.7.35. P. B. B. Ogilvie, to No. 58 (Bomber) Squadron, Worthy Down, 27.7.35.

Stores Branch

Flight Lieutenant.—G. L. Worthington, to Air Ministry (Dept. of A.M.S.O.), (D. of E.), 29.7.35.

Pilot Officers.—L. C. Dennis, to Royal Air Force Station, North Weald, 6.8.35. H. M. C. Harwood, to Royal Air Force Station, Biggin Hill, 6.8.35. C. G. Walker, to Administrative Wing, Cranwell, 6.8.35.

Medical Branch

Wing Commander.—W. E. Hodgins, to Home Aircraft Depot, Henlow; for duty as Medical Officer, 2.8.35.

Flight Lieutenant.—V. H. Tompkins, to No. 20 (Army Co-operation) Squadron, Peshawar, India, 9.7.35.



Topics of the Day

Instructional Variations

FLYING instruction has been reduced to the finest of fine arts, and the procedure, as well as the "patter," has been so largely standardised that a pupil may pass from one instructor to another without losing the threads of knowledge.

Nevertheless, human beings are not robots, and every pilot has his own ideas about certain of the more advanced points in flying technique. Consequently, a few pupils sometimes complain that they are occasionally criticised by a strange instructor for doing the very things that have been drummed into them by another.

Quite simple little differences in flying methods cause some unnecessary friction. One recently licensed young man told me that a new instructor was incensed at the very gentle, continuous turns which he made during landing circuits. All turns, he was told, should be definite and final, and a practice circuit should be made in a series of straight lines punctuated by fairly steep turns.

I was taught to use "crab" sideslips for all practice forced-landing approaches, because this type gives the pilot a better view of the boundary and enables him to see straight ahead in the line of approach. Another instructor refused to tolerate these sideslips for the very excellent reason that it is easy to overdo the application of rudder and to stall partially at a critical moment. In the normal steep sideslip any loss of flying speed is indicated by the increased amounts of aileron necessary to keep the machine in the slip, though this rule does not necessarily apply to every type of aeroplane.

Only when aeroplanes fly themselves entirely will such little problems cease to trouble itinerant pupils.

A Point of Trim

ONE of the little things which worry the private owner who does most of his own minor maintenance work concerns the machine's trim in the air. A few weeks ago a friend of mine found that his machine was flying right wing low. There was nothing serious about the tendency, but it was a distinct nuisance during a long cross-country flight.

He saw that the fault could obviously be corrected in two entirely different ways. Either the aileron controls could be adjusted or the rigging of the starboard wings could be altered so as to increase slightly their camber. After thinking about it for a few days he came to the conclusion that the problem was rather beyond him, and flew the machine over to an aerodrome.

The ground engineer there corrected the trouble by adjusting the aileron controls so that when the control column was central there was slightly more droop on the aileron of the starboard wing.

A very simple point, but one would, logically, prefer to alter rigging rather than control arrangements.

The Importance of Inspection

INCIDENTALLY, the importance of a careful examination of the machine after a heavy landing, or other cause of excessive strain, cannot be over-estimated.

A few years ago I was about to leave the tarmac in a club machine when the ground engineer, who had started the engine for me, suddenly started to dance about and to signal the "stop everything." He had noticed that there was something queer about the rigging.

It transpired that the member who had previously used the machine had pulled the tightest of tight loops and that the rigging was, consequently, very badly strained.

The Landing Ground Register

SEVERAL times recently I have heard mild complaints concerning the relative cost of the very useful A.A. and R.Ae.C. Register of Landing Grounds: A knowledge of the whereabouts of emergency landing grounds is extremely useful to private owners and club members who do a great deal of cross-country flying, and these landing grounds, in any case, can increase the range of one's movements to a very useful degree.

In order to obtain the register it is necessary to become a full member of the A.A., to obtain an Air Touring Card, and, finally, to purchase the register. The total cost is in the region of £4 10s. The possession of an Air Touring Card gives one a number of other facilities, but one owner in particular complains that, as he never takes his machine abroad, the card is an unnecessary luxury. He suggests that it should be possible, either directly or through his club, to obtain the register at a lower cost.

A Public Service

ON the face of it, I must admit that the ultimate cost of the register is on the high side, even though its value can hardly be assessed in mere cash.

But it should be remembered that nearly every one of the landing grounds has been surveyed from the air, and all of them must necessarily be inspected from time to time. Such work cannot be carried out cheaply, and few people realise the difficulties involved in obtaining permission to use even immediately suitable fields. Obviously, the owner of a field is not likely to receive any very startling income from the occasional half-crowns subscribed by wandering aviators, and many farmers feel that the whole thing is more trouble than it is worth. The number of possible subscribers to the register is, in any case, comparatively small at present.

If such a register were produced separately as a business proposition its actual cost to each purchaser would probably be much higher than it is.

It is, in fact, published simply to help the flying members of the A.A., whose aviation section can hardly be considered yet as a profitable one. INDICATOR.

Private Flying**FROM THE CLUBS***Events and Activity at the Clubs and Schools***WITNEY AND OXFORD**

Miss Jean Morton has passed her "A" licence tests. Flying time last week was 24 hr., 16 representing solo flying.

TOLLERTON

Six new members joined last week, and flying time totalled 38½ hr. Mr. E. J. Wilson and Mr. S. Grant qualified for their "A" licences, and there have been a number of renewals.

NEWCASTLE

First solo flights have been made by Miss J. P. Forster and Dr. J. Taylor. Mr. M. A. Fraser has completed his "A" licence tests. Twenty-five new members have been enrolled, and last week's flying time amounted to 39 hr. 15 min., 12 hr. 5 min. being dual.

CASTLE BROMWICH

Mr. T. A. Jefferson has been appointed assistant instructor in succession to Mr. J. Jurdon. Mr. Jefferson left the R.A.F. a month ago on his transfer to the Reserve.

Flying times last week were 20 hr. 35 min. dual and 14 hr. 40 min. solo.

CIVIL AVIATION SERVICE CORPS

On Sunday, August 18, eight members of the C.A.S.C. attended the aerodrome at Fen Ditton and flew 3 hr. 15 min. dual and 1 hr. 15 min. solo. Work on the hangar, which will eventually house the Corps' "Pou," is proceeding fast but has been interrupted by the weather.

SHEFFIELD

Although this new club is at a disadvantage through the absence of numerous members on holiday, progress continues to be satisfactory. Flying was handicapped on two days by bad weather, but 12 hr. were flown during the week. Mr. Ellis Rimmer has become a member.

LEICESTERSHIRE

During the fortnight ending August 17, club machines flew 66 hr. 55 min. and first solos were made by Messrs. R. E. Frears and O. M. White. Mr. Frears, incidentally, has taken his "A" licence.

On Saturday, August 10, night flying took place, and flights to Ratcliffe aerodrome were made.

HANWORTH

The Club's blind flying machine will be ready for service during the week.

Messrs. J. H. Johnson and W. P. Barker have passed their "A" licence tests, Messrs. Ricketts and Provis have gone solo, and Messrs. Wall, Fowler and Ryan have become members. Flying times totalled 41 hr. 50 min.

KARACHI

A total of 104 hr. flying was logged during July.

Three Club "Moths" formed over the Boat Club Regatta, Major Jones giving a display of aerobatics. A motor boat was then "bombed." Later in the month the Club co-operated with the officials of the Airport in a practical test of the new floodlight cum beacon situated on the northern boundary.

CAMBRIDGE

Considering the fact that so many members are on holiday, last week's total of 57½ hr. flying is very gratifying.

Mr. Kaijser of Sweden is taking his "A" licence, and Mr. Colbourne, also, is taking his as a preliminary to training for his "B" licence. The new "Jubilee" Monospar has been making charter trips during the week, and joy rides are maintaining their popularity.

REDHILL

The "Jubilee" Monospar was demonstrated last week by Mr. Seth Smith, and a few members availed themselves of the opportunity of flying it. The Club "Moths" and the Autogiro, flown by members, took part in a "Dawn Patrol" to Brooklands.

A series of classes dealing with the "B" licence syllabus at fixed hours on four days a week has been commenced. Five new members joined the club last week, and 66 hr. were flown.

BRISTOL

Business was slack owing to the holidays, but flying time to August 17 was 90 hr. 10 min.

Mr. C. W. A. Scott visited the club in a "Cadet" on Friday, and Mr. J. Tratman took a club machine to Coverack in Cornwall on Thursday, returning the same day. Capt. the Hon. L. Lambart has joined the club and is keeping his B.A.C. "Swallow" at the airport.

Mr. J. Goodban has taken over the local management of the Airwork service station in place of Mr. F. Hinton, who has gone to Heston as works manager.

KENT

August looks like being a record month for the Kent Flying Club, flying time to the week ending August 16 amounting to 64 hr. dual and 30 hr. solo. Last week seven new members were enrolled, Mr. Videan passed his "A" licence tests, and Messrs. Helcke and Daniels made their first solo flights.

LEEMING

During the first eighteen days of August the Yorkshire Aviation Services' school totalled 126 hours' flying. First solos have been made by Mr. T. M. Barwick, M.F.H. of the Bedale, and by Miss Chaytor. Mr. E. D. Chaytor has now completed his "A" licence tests.

The school Miles "Hawk" is now undergoing a complete overhaul, but it is expected to be out again before the end of next week.

CARDIFF

Club machines have cleared customs for Ireland four times during the last fortnight. The "Jubilee" Monospar paid another visit on August Bank Holiday during its tour of aerodromes in the British Isles.

The club is busy with the organisation necessary for the part Cardiff aerodrome is to take in the King's Cup Race. The landing ground has been slightly enlarged and work on it is still proceeding. Flying time was 34 hr. 20 min. last week.

LONDON

The annual competitions for aerobatics and forced landings will be held in the afternoon and evening of Sunday, September 8, and the map reading competition on the afternoon of Saturday, September 14. The navigation competition will be held on Sunday afternoon (September 15). Entries should be made as early as possible.

Flying time last week amounted to 87 hr. 10 min. Messrs. W. Stern, H. S. A. Chapman, E. E. Fennell and F. L. Ingall made first solo flights, and Messrs. E. F. C. Burton and G. Lenanton completed their "A" licence tests. There are twenty-five new members.

AIR SERVICE TRAINING

During July 1,719 hr. flying was recorded, constituting a record. H.R.H. the Prince of Wales paid a visit to Hamble on his return from Jersey and Guernsey.

Mr. A. H. Abbott, R.A.F.O., and Mr. K. D. Knocker have joined the staff as flying instructors, bringing the total number of instructors to twelve. A new residential building has been completed, making accommodation for over eighty students.

August brings the first entry of candidates for R.A.F. Short Service Commission under the expansion scheme, and training will be carried out for two months. With this entry are also some candidates for Cranwell.

Five instructors' certificates have been awarded, and blind flying courses have been completed by six students. Eleven "A" licences were taken during June and July, and three "B" licences were issued.

NEWTOWNARDS

Pupils of the Ards Flying School put up a very fine performance in the forced-landing competition which was part of a small flying programme organised for their tea-party on July 6. There were seven competitors, of whom the most experienced had only twelve hours' solo, and the least experienced three hours' solo, to his credit. They had to perform an exacting task.

A low fence was erected of light bamboo canes with squares of white cardboard pinned upon the top. This gave the appearance of a solid, though perfectly harmless, obstacle. The fence was thirty yards wide, each end being marked by a white ground strip. Two hundred yards away from the fence two further white strips marked the limit to which competitors could run and still gain full marks.

The approach had to be made without engine from 2,000 feet, in orthodox forced-landing style. Forty marks were allotted for style and quality of approach, forty for position of coming to rest, and twenty for the quality of the landing. All marks were forfeited for using the engine or brakes, for undershooting or touching the fence, or for overshooting. One attempt only was allowed and although each competitor was required to have dual and solo practice before the event, he was alone in the machine for the actual competition.

Not a single competitor made a poor attempt, although four of them cut the approach a little too fine and failed, by a matter of inches, to clear the fence. The other three showed excellent judgment, and the winner, Mr. K. Webb, gained 90 per cent. of the total marks and the prize of a cigarette-lighter in the shape of an aeroplane. Mr. K. W. Mackenzie was second with 80 per cent., and Mr. Mitchell was third with 60 per cent.

The programme opened with a short aerobatic display by Flt. Lt. Bryant, who followed this by a "Spotting the Errors" competition, in which he made two circuits and landings, introducing twelve common errors committed by pupils.

Private Flying**NORTHAMPTONSHIRE**

A new challenge cup has been presented to the Club by Lord Wakefield, but it has not yet been decided how it shall be won. There were two new flying members last week—Messrs. K. A. Merritt and G. Civil—and during the week Lord Erskine visited the Club. On Sunday a party flew over Sywell from Brooklands.

DUBLIN

The Dublin Air Ferries School has been formed into the Dublin Aero Club, and at the moment is forming its rules and regulations.

A number of interesting charter flights have been made, several of them in connection with the Galway races. Trips were also made to Brittas where the company has licensed a large field. Three new members have joined, and Mr. L. U. Smith passed his "A" licence tests.

A very successful "At Home" was held at Baldonnell by the club, the chief event being the seventy-five mile race for the Irish Cup presented by Lady Nelson. The event was won by Mr. French, a Club member. Mr. Bell won the landing competition.

CINQUE PORTS

The most important event of the week at Lympne was undoubtedly the arrival of M. Henri Mignet in his "Pou du Ciel" after his flight across the Channel. Great interest was shown in this little craft and on Tuesday large crowds assembled on the airport to watch M. Mignet give demonstration flights for the benefit of the Air Ministry and the Press.

More than fifty acceptances have been received for the International Meeting, and among them are thirty-one from Germany and twelve from Belgium and France. Herr Redde and Herr Ernst Udet have both promised to attend and the latter intends to take part in the display. France's representative in the display will be M. Michel Doret, flying a Potez.

Many entries have been received for the Cinque Ports Wakefield Cup Race and it seems probable that the handicappers will have a busy time. One of the new Caudrons and a Praga "Baby" have been entered and Mr. Seth-Smith will fly the "Jubilee" Monospar. There will be a different programme on both days and record attendances are expected.

Flying hours reached a total of one hundred and forty-four for the two weeks ending last Thursday. Miss Margaret Cunnison has passed her "B" licence tests and Mr. Jack Ingram and Mr. Constant have made their first solos. Sir Phillip Sassoon, who has been staying at Port Lympne, generously loaned his "Leopard" and pilot for joy-riding purposes.

NORFOLK AND NORWICH

The flying record of a fortnight ago was easily beaten last week when Club members and the boys of the P.S.A.C. flew 104 hours, the major part of which was put in by the boys themselves. During the week Mr. Vaughan Fowler demonstrated the "Swallow."

Of the twenty boys who are now in training at Norwich every one has been able to fly and three have gone solo. These were Mr. Patrick Ashton, from Stowe, and Messrs. J. Hirle and R. Davis, from Lancing College and King's College School, Wimbledon.

BROOKLANDS

The flying time last Sunday was almost a record for Brooklands, more than forty-nine hours being flown on Club machines. The day started with a "dawn patrol," twelve machines being in the air and on the defensive to such good purpose that only one visiting machine came through unobserved. In all, thirty-four machines took part and some seventy breakfasts were served in the clubhouse.

Later a formation of six machines flew to Sywell and back and then to Reading and back; at Woodley Mr. Morris was successful in winning the landing competition. The day concluded with a mass formation flight to the new Shoreham aerodrome.

During the week Mr. Brooke-Smith made his first solo. Capt. and Mrs. Davis flew to Amsterdam last week-end together with several members of the Brooklands and Cinque Ports Clubs. There they were the guests of Mr. Van Marken.

The Gliding Subsidy

MATTERS connected with the Gliding Subsidy appear to have sorted themselves out satisfactorily. An advisory committee of the B.G.A. has been appointed to deal with the eligible clubs and their recommendations are then passed on to a board of trustees composed of five members appointed by the Royal Aero Club, the Royal Aeronautical Society, the Air Ministry, the Meteorological Society, and the British Gliding Association.

Apparently eight clubs have been approved for a grant, but the amounts which will be disbursed this year have not so far been published. These are likely to be based on a 70 per cent. value of land and buildings and 50 per cent. value of machines. Clubs have, in order to be eligible, to prove that they have a five years' tenure of their gliding sites and also to satisfy the board on other points of a similar nature designed to show their stability.

A 36-H.P. "BABY" MONOPLANE

Side-by-Side Seating and a Top Speed of 94 m.p.h.

KNOWN as the "Air Baby," the Praga 114 is a two-seater high-wing cantilever monoplane constructed by Ceskomoravska-Kolben-Danck, of Prague. Its wing, fuselage, fin and rudder are entirely of wood, with plywood covering, and the engine mounting, undercarriage, tail plane and elevator are of welded-steel tubing, the horizontal surfaces being fabric-covered.

Two persons are carried in an enclosed cabin, seated side by side on seats of aluminium sheet arranged to accommodate back-type parachutes. From a point situated at one-third of the wing chord the cabin roof is hinged to facilitate entry and exit. Dual controls are fitted.

A Praga flat-twin air-cooled engine of 113.5 cu. in. capacity, giving 36 h.p. at 2,400 r.p.m., is employed. The oil tank, of six pints capacity, is built integral with the bottom half of the crank case. Fuel, which is consumed at 2 gallons per hour at a cruising speed of 81 m.p.h., is carried in a gravity tank holding 7½ gallons placed in the wing behind the cabin, the carburettor being fed by a single Petroflex pipe.

COMPACT: The Praga 114 cabin two-seater, with 36 h.p. air-cooled flat-twin engine, which was demonstrated by Mr. Kostalek at Heston last week. The machine sells in Czechoslovakia for about £380.



Some dimensions and performance figures are given in the accompanying table.

PRAGA 114. ("AIR BABY.")

PRAGA 36 H.P. FLAT-TWIN ENGINE.
LIGHT TWO-SEATER MONOPLANE.

DIMENSIONS.

| | | |
|-----------|-----|------------------------|
| Span | ... | 36ft. (11 m) |
| Wing area | ... | 152 sq. ft. (15.25 m²) |
| Track | ... | 5ft. (1.56 m) |

WEIGHTS.

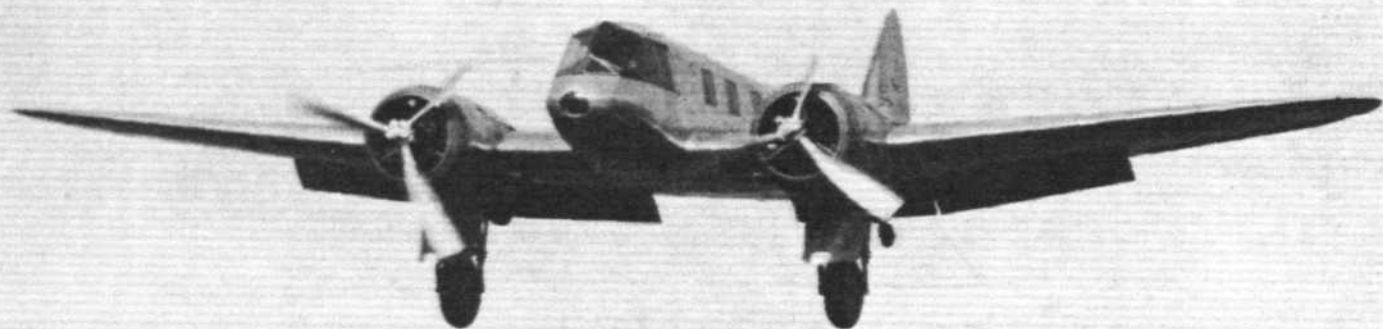
| | | |
|-----------------|-----|--------------------|
| Weight empty... | ... | 580 lb. (265 kg) |
| Weight loaded | ... | 1,030 lb. (467 kg) |

PERFORMANCE.

| | | |
|--------------------|-----|------------------------|
| Maximum speed | ... | 94 m.p.h. (150 km/hr) |
| Landing speed | ... | 37.5 m.p.h. (60 km/hr) |
| Climb in 3 mins. | ... | 1,250 ft. (380 m) |
| Service ceiling... | ... | 11,000 ft. (3,300 m) |
| Range (4 hours) | ... | 310 miles (500 km) |

COMMERCIAL AVIATION

— AIRLINES — AIRPORTS —



BRITAIN FIRST: The Bristol 140 civil monoplane, which has been presented to the Air Ministry by Lord Rothermere, coming in to land at Filton aerodrome. With two Bristol "Mercury" V12 engines the top speed is reputed to be in the region of 270 m.p.h.

THE WEEK AT CROYDON

The Sixth Port : Overloading Dangers : The Keeper of the Gate : Prospective Air Travellers : Planning to the Minute

THE people at Le Bourget aerodrome, Paris, claimed a record recently with 600 passengers and seventy-odd machines in and out in one day. This roused some statistically minded person at Croydon, who triumphantly announced that the Airport of London had two hundred machines in and out daily and about a thousand passengers, including internal lines and short-flight passengers.

Croydon is the sixth passenger traffic port in England, and as soon as we start to cater seriously for third-class traffic we shall come very much higher on the list.

Man Mohan Singh, well known and popular at Croydon, left on Monday, August 12, in a "Gipsy Major Gull" for a destination he would not reveal. The newspapers said India; they were wrong, for the Cape Town record was his idea. At the time of writing he is said to be well in advance of the record. The surface of Croydon is notoriously poor, and after an earlier failure by another long-distance machine, Man Mohan Singh wisely taxied to his take-off position without much fuel and loaded up there with the aid of a mobile unit.

He got away well, but the question of whether long-distance machines, heavily loaded with petrol, should be allowed to start from a purely commercial airport still arises. Eventually an overloaded machine will start from Croydon on a stunt flight. Commercial machines are not allowed to overload by half a kilo, and this is presumably not only for the safety of those in the machine, but also for the sake of those dwelling in the vicinity. The responsibility is on the authorities, and it is a grave one. Must we, as in the case of the wireless beacon mast, wait until an accident happens.

I take off my hat to Mr. Nubar Gulbenkian, who escaped with his life from a Heston crash some time back and spent a month in hospital with burns and shock. As soon as he could move, and whilst still bandaged, he got Capt. Olley to fly him from Croydon to Heston and back to test his nerve (the passenger's nerve, of course, not Capt. Olley's!). The test was passed with flying colours, which is an important matter, for Mr. Gulbenkian depends much on flying in his business.

The iron gates at Croydon which cut off the Customs area from the outer world have been moved, and members of firms whose lawful occasions cause them to pass that way, though not on affairs connected with Customs, find themselves cut off. They can now proceed only after parley with a gatekeeper, who keeps these gates closed, temporarily only, I trust, with a bit of string. Passenger cars pass that way also. On Saturday a driver had to get off and play an elaborate game of cats' cradle with the

gatekeeper before the Gordian, granny or true lovers' knot could be disentangled.

Last week there were two interesting batches of lady visitors who were flown over London. It is worth noting that these hundred or so ladies are prospective long-distance air passengers now they have once flown, and that such parties are well worth encouraging because it is usually wives who try to stop husbands from flying.

British Continental Airways, Ltd., clocked out the 5,000th Continental air departure for the year at 2 p.m. on Wednesday, August 14, the ceremony being graced by the presence of Richard Tauber and his fiancée en route for Ostend.

The K.L.M. 2 p.m. departure last Sunday had Capt. Johnston, Controller of Civil Aviation in Australia, on the passenger list, as well as Wallace Beery, the film actor. It is a melancholy sidelight on our warped sense of values, or rather on the way the Press has trained us, that the really important passenger of the two was not cheered, photographed, interviewed, or besieged for autographs.

Last Monday Provincial Airways, Ltd., had one of those jobs where success depends on good organisation, when Cadbury's asked for Mr. George Cadbury to be fetched from the Bremen Castle in Southampton Water and conveyed via Castle Bromwich aerodrome to Bourneville Garden City. The trip entailed the use of a speedboat, an aeroplane, and a fast car.

The K.L.M. F22 and F36 types are now on service again, and the former type has been in and out of Croydon several times during the past week.

Making Connections

Somebody was commenting recently on the punctuality of the 10.55 p.m. K.L.M. arrival each night. So long as the wind is favourable or negligible punctuality of arrival of such a machine is feasible. However that particular service links up with half the European capitals at Amsterdam, and when there are strong winds on these routes punctuality at the ultimate destination is extremely difficult. Without fast aeroplanes the schedule would be most irregular. As it is the necessity for proclaiming that the "Mail packet will arrive at 10.50 p.m. wind and weather permitting" is just as necessary when sailing the skies as it used to be when sailing the seas. It is curious that aviation should be subject to this disability, alone almost amongst modern means of transport. Slowly, of course, this occasional failure to maintain an exact arrival schedule is being got over.

A. VIATOR.

Commercial Aviation**Stoke on the Air Route Map**

SINCE August 12 Railway Air Services, in the course of their service between London and Glasgow, have called at Stoke-on-Trent airport on request. It is many months since the Mayor of Stoke regretted the fact that no air lines were using Meir aerodrome.

Incidentally, R.A.S. now issue simple but satisfactory route maps for the use of passengers on five sections of their routes.

Traffic at Ards

FOUR hundred and fifty-two air-line passengers were handled at the Ards Airport in July. Of these 242 travelled by Hillman's Airways and 200 by Blackpool and West Coast Air Services. 29,400 lb. of baggage and 29,100 lb. of freight (the latter by Hillman) were also dealt with. Altogether 389 arrivals or departures of aircraft took place in July, apart from those by school machines.

In order to give some idea of weekly figures, 100 passengers and 2,385 lb of baggage or freight were handled in the week ending August 11. At the present time passenger figures are fairly equally divided between the two air lines using Ards.

Heston Happenings

ONE day last week the Inner Circle decanted at Heston a large tank with bulbous growths in the roof, the pilot explaining that it was occupied by sea-horses for Blackpool, and "would the next pilot please squeeze the bulbs to let in air at regular intervals." The United Airways' pilot, usually mild, turned quite acid at the proposal, and the sea-horses, losing hope, sank into a state of suspended animation. From this they were aroused by a passenger who offered to take them in his lap and did so, squeezing, in his enthusiasm, so much air into the tank *en route* that the occupants are said to have arrived at Blackpool fighting drunk.

This week a live lobster arrived from Jersey on order for the London Zoo. A keeper met it at Heston, successfully forestalling the cook, who was seen hovering round the tank with a nasty look in her eye.

Harrods, Ltd., have placed a contract with British-American Air Services, Ltd., for their air hire business.

A "Dawn Express" for Passengers

FLT. LT. PUGH made a record trip to Paris in Commercial Air Hire's Avro 642 last Saturday morning. At 4.45 a.m. the machine left the tarmac at Croydon with a big load of newspapers. After discharging his cargo at Le Bourget, Flt. Lt. Pugh was back on the tarmac at Croydon at exactly 8 a.m., the distance of 410 miles being covered in 3½ hours, including the wait at Le Bourget.

Permission has now been granted by the French Air Ministry for the carrying of passengers and freight on the Air Dispatch Paris "Dawn Express." Many people have been anxiously waiting for this service to commence, as it will be invaluable to the business man who cannot afford to waste working hours in travel. Provided that passengers have trained themselves to do without sleep it will be possible for them to attend a theatre in the evening, arrive at Croydon in time to have hot coffee in Air Dispatch's spacious lounge, and arrive in Paris with plenty of time for ablutions and breakfast before starting the day's toil. On the return trip particularly strenuous passengers will be able to visit a show that evening and be in their offices by nine o'clock next morning!

Owing to the increase in business Commercial Air Hire has found it necessary to add to its number of pilots. The latest addition to the firm is Mr. R. T. S. Morris, who hails from Tangmere—as do all Commercial Air Hire's pilots—and was with No. 43 Fighter Squadron.

Flt. Lt. Pugh dropped into Heston on the historic "Twelfth" with the first load of grouse of the season and supervised the unloading of 450 brace from a "Dragon" in record time.

Mr. Eric Noddings returned last week-end from Lausanne (Switzerland) with the same "Dragon" converted into an ambulance machine and with a stretcher case on board. The patient was a small child, accompanied by her parents and a nurse, and it was impossible for her to travel by any other method. After a smooth take-off Mr. Noddings climbed steadily to an altitude of 9,000ft., thus avoiding any rough air, and the patient arrived at Croydon having actually enjoyed the trip. The successful demonstration of Commercial Air Hire's aerial ambulance at Farnborough was directly responsible for this charter, and the company anticipate many more trips of a similar nature.

Faster to South America

THE *Graf Zeppelin* service from Germany to South America has been speeded up by the simple expedient of reducing the time spent at Pernambuco. The time of the journey from Friedrichshafen to Rio de Janeiro is to be reduced by twenty-four hours.

Ground Engineers' Examination

EXAMINATION boards will sit for the purpose of examining applicants for G.E.'s licences at the following places and times: (a) London, on each Tuesday in October, November and December; (b) Croydon, on the second Friday in the same months; (c) Manchester, on the first Friday in December; (d) Bristol, on the first Friday in October; and (e) Glasgow, on the first Thursday in November.

Applications should be made on C.A. Form 2B, indicating the most convenient centre, and should be addressed to the Secretary, Air Ministry (C.A.2), Adastral House, Kingsway, W.C.2. Licence extensions will also be dealt with at these boards.

Those who wish to sit at Manchester, Bristol or Glasgow should apply 28 days before the specified dates.

Radio Development in U.S.

A NEW transmitting system, which has been developed by the U.S. Bureau of Air Commerce, is now in practical operation at Pittsburgh, Pa. This broadcast and radio beacon can transmit vocal and directional signals simultaneously, so that, in bad weather, a pilot can hold his machine on the beam by means of a dashboard indicator whilst receiving aural instructions or information from the airport.

The directional signals, which are A (.—) and I (..) on either side of the beam, interlocking as usual into a continuous signal on the correct course, can also be received satisfactorily through the pilot's earphones. The new off-course signals are, aurally, more easily distinguishable than the present A (.—) and N (—.). If a machine is not equipped with the dashboard indicator, the pilot has only to move a switch to receive either beam signals or broadcasts in his earphones. The Pittsburgh transmission, incidentally, registers on a direction-finding needle without the fluctuation which is inevitable with the standard beam signals.

Big Tenants for Gatwick

NEARLY two months ago it was learnt unofficially that Hillman's Airways were considering a mass removal to Gatwick when this aerodrome was ready to receive them. Enquiries elicited the information that negotiations were in progress and that any premature announcement might be fatal.

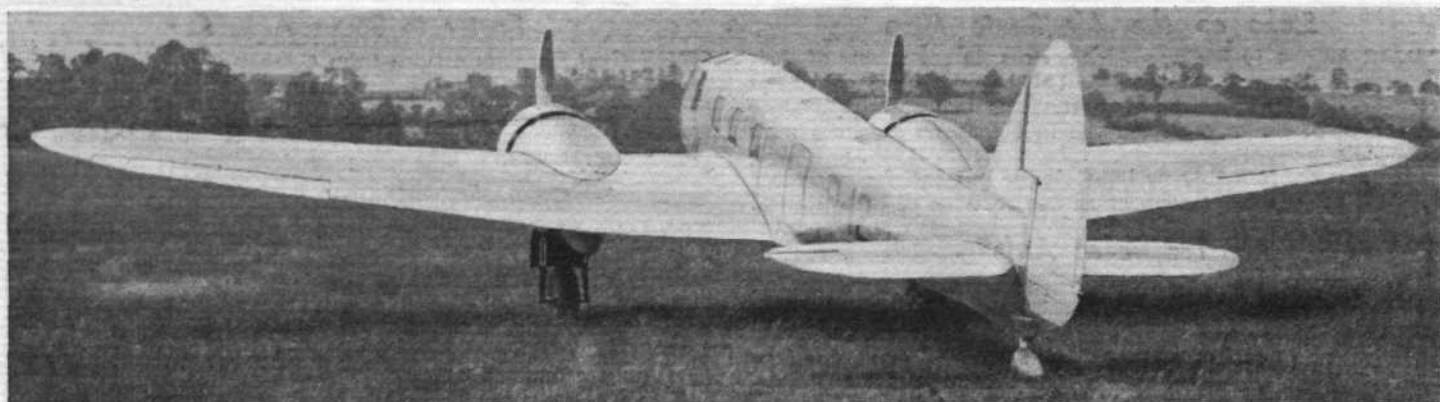
Last week, however, the news was prematurely made public, and Hillmans agree that the move is to be made. Gatwick, of course, is one of two selected alternative airports and has the advantage of a main-line station which the Southern Railway has built, at the instigation of Airports, Ltd., on the edge of the aerodrome.

Another "Rapid" has been purchased by the company, bringing their fleet of this type alone up to seven. Last Tuesday one of the 86's was used to carry Geraldo and his orchestra over Olympia while they broadcast to the assembled Olympians, and on the same day the chief pilot, Capt. Anderson, took a family out to Marienbad, in Austria. This, incidentally, is now an annual trip.

At Shoreham

ALTHOUGH the new Brighton, Hove and Worthing airport at Shoreham is, as an aerodrome, in full working order, the buildings and road have not yet been finished. Olley Air Services are, therefore, not yet able to take full advantage of the possibilities of the district.

However, a Short "Scion" is kept at Shoreham permanently, and Olley's daily London-Deauville service calls there on request. In due course there should be a big demand for the daily air excursions to southern beauty spots which have been planned. R.A.S. run a Sunday service to Le Touquet and P.S.I.O.W.A. use Shoreham for a service from Brighton to Ryde and Bournemouth. The other plans revolving around the arrangements being made between Cobham Air Routes and Olley Air Services are maturing slowly but surely. There are rumours that two very large machines may appear next spring, but whether these are for the de-suspended *Guernsey* service or for Blackpool and West Coast Air Services remains to be seen. United Airways appear to have no difficulty in filling their "Argosy" on various jobs.

Commercial Aviation

HIGH SPEED : The clean lines of the all-metal Bristol 142 are obvious in this view, which also shows the trimming tabs on the rudder and ailerons. A flying picture of this machine is reproduced on page 212.

New Australian Service

ADELAIDE AIRWAYS, LTD., a new company which is to be managed by the Adelaide Steamship Company, have placed an order with General Aircraft for two S.T.25 ("Jubilee") Monospars as the first units of the fleet for a service from Adelaide to Port Lincoln, the York Peninsula and Kangaroo Island. The service will be started early in the new year, and extensions are contemplated.

Opening-up Bengal

IT is proposed to construct aerodromes at important centres in Bengal, to extend and otherwise improve landing grounds and to erect staff quarters. For the present, Dum Dum and Chittagoan will receive Government attention.

In this connection it is of interest to note that the office of Executive Engineer, Aviation Division, Central Public Works Department, has been established in Calcutta, with Captain T. E. Longfield, R.E., in charge.

Mails to the Hills

IT is understood that a survey is being carried out by engineers of the Himalaya Air Transport Company for the selection of landing grounds for an air service between Delhi, Kalka, Lahore, Dehra-Dun, and Kathgodam so as to connect Simla, Mussoorie, and Naini-Tal, the principal hill stations in Northern India, with Delhi, Lucknow, and Lahore. The company has applied to the Government of India for subsidy.



USEFUL INFORMATION : This sign greets pilots as they go into the control office (marked with the large C) at Heston Airport. Throughout the United States it is the general practice to have a board at each airport giving not only its altitude above sea level, but also its general position in relation to adjacent airports. When flying in bad weather this information is extremely helpful and the idea could, with benefit, be extended to this country. (Flight photograph.)

Advantages of Air Travel

ENTITLED "... to Business Men and Women," a booklet recently issued by Imperial Airways, contains a great deal of information of value to all those people who wish to save time and money when travelling.

Indian National Curtailments

IN connection with the withdrawal of their once-weekly mail and passenger service between Calcutta and Rangoon, which has connected since the beginning of the year with the second Empire mail service, Indian National Airways, Ltd., state that this decision has been made because the traffic does not justify continuance on a regular basis without the aid of a Government subsidy.

The service was withdrawn with effect from August 9, i.e., on completion of the northbound service from Rangoon to Calcutta on that date.

For the same reason the company recently decided to suspend indefinitely its four-times-a-week return service between Calcutta and Dacca and its twice-a-week return service between Calcutta and Chittagong via Dacca.

It is hoped to resume the Calcutta-Dacca service when it is found possible to establish it as part of the proposed extension into Assam, and in the meantime those desirous of travelling by air between Calcutta and Dacca have only to reserve accommodation and they can be carried on the old service days at the same times and fares as existed prior to the withdrawal of the regular service. The position is, in fact, that the service now runs when there is a demand for it, and it is hoped that the demand will be sufficiently great to justify the company in maintaining it on this basis until a regular and more frequent service can be reopened.

The withdrawal of these regular services does not at present affect the company's charter work from Calcutta and Rangoon.

NEW COMPANIES

SCOTTISH COLLEGE OF AVIATION, LTD. Private company. Registered in Edinburgh, Aug. 9th. Capital £26,000 in £1 shares. Objects: to provide the means for instruction and education in aviation, etc. First directors: George N. D. Hamilton, 3, Gloucester Place, Edinburgh, David F. McIntyre, Skiff Cottage, Howood, Renfrewshire, Robert L. Angles, Ladykirk, Monkton, Ayrshire, Wilfred E. Nixon, Arden, Cold Harbour Lane, Bushey, Hertfordshire. Secretaries: Baillie and Gifford. Registered office: 3, Glenfinlas Street, Edinburgh.

IMPERIAL AIRWAYS (FAR EAST) LIMITED. was registered as a "private" company on August 12, with a nominal capital of £10,000 in £1 shares. The objects are to establish and carry on in the Far East and elsewhere the business of an aerial transport company, and in connection therewith to act as agents of, and in conjunction with, Imperial Airways, Ltd., and its associated and subsidiary companies: to manufacture and deal in balloons, aeroplanes, hydroplanes and airships of all kinds, etc. The first directors are: Rt. Hon. Sir Eric Geddes, G.C.B., G.B.E., K.C.B., Albourne Place, Hassocks, Sussex (chairman, Dunlop Rubber Co., Ltd.); Geo. E. W. Humphrey, C.B.E., 8, Elm Tree Road, St. John's Wood, N.W.8 (managing director, Imperial Airways, Ltd.); Lt.-Col. Harold Burchall, D.S.O., The Croft, Woodland Way, Kingswood, Surrey (general manager of Imperial Airways, Ltd.); Major Kenneth M. Beaumont, D.S.O., 26, Pembroke Gardens, W.2, solicitor. The company is to be and remain under British control. Qualification: 1 share. Remuneration: as fixed by the company. Secretary: G. Temple Meller. Solicitors: Beaumont and Son, 380, Gresham House, E.C.2. The registered office is at Airways Terminus, Victoria Station, S.W.1. The file number is 303,993.

IMPERIAL AIRWAYS (NIGERIA AND GOLD COAST) LIMITED. was registered as a "private" company on August 12, with a nominal capital of £10,000 in £1 shares. The objects are to establish and carry on in West Africa and elsewhere the business of an aerial transport company, and in connection therewith to act as agents of, and in conjunction with, Imperial Airways, Ltd., and its associated and subsidiary companies: to manufacture and deal in balloons, aeroplanes, hydroplanes and airships of all kinds, etc. The other particulars are similar to those of Imperial Airways (Far East), Ltd. (q.v.). The file number is 303,994.

INCREASE OF CAPITAL

AIRSCREW COMPANY, LTD., Thames Street, Weybridge.—The nominal capital has been increased by the addition of £30,000 in £1 ordinary shares beyond the registered capital of £20,000.